THE JOURNAL OF THE AMERICAN OSTEOPATHIC ASSOCIATION

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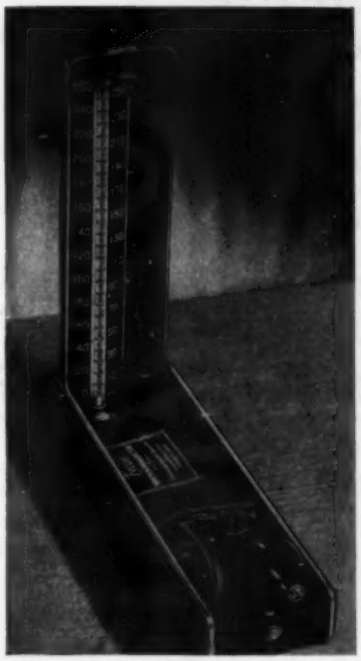

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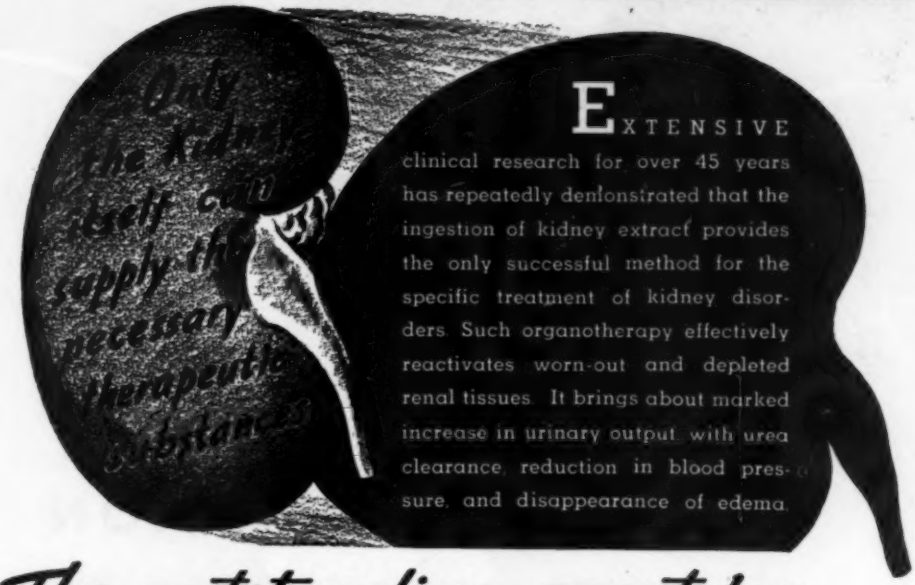

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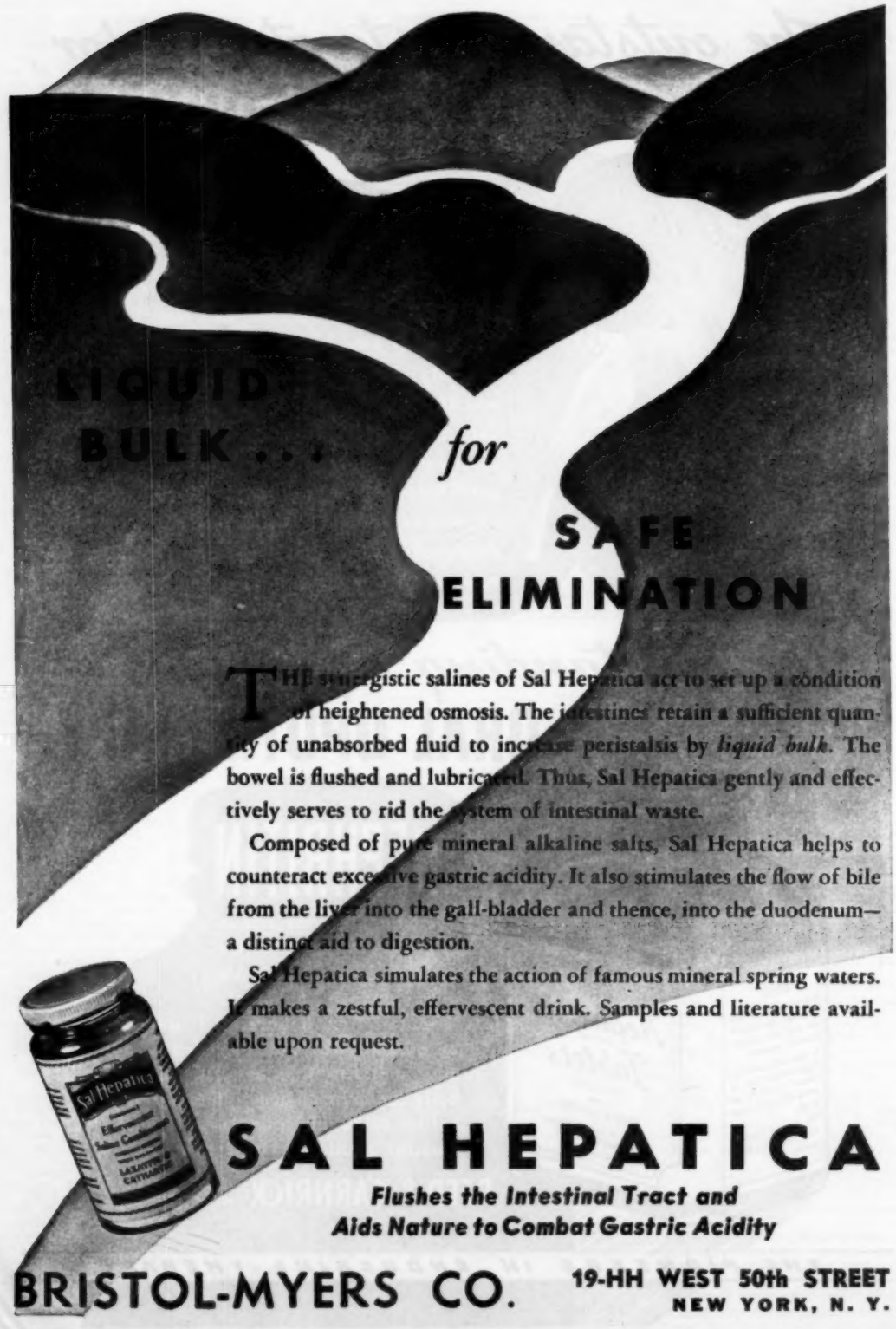

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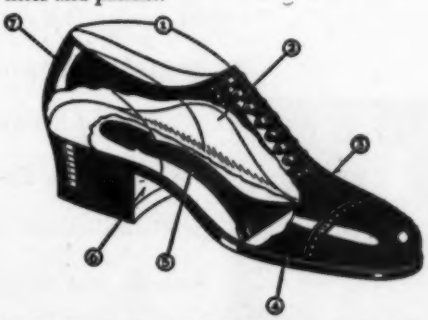

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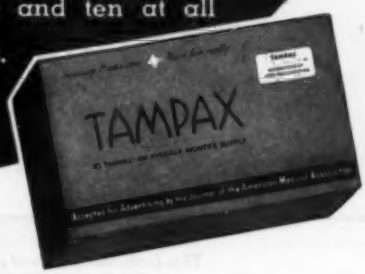

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It is difficult to estimate the frequency of mild vitamin B_1 deficiencies in the United States. However, until such information is at hand, it is not illogical to suggest that latent avitaminosis B_1 must be regarded as an active possibility in some cases which may come to the attention of the medical practitioner. Fortunately, several factors are operative which give assurance that eventually the incidence of latent avitaminosis B_1 will be reduced to a minimum.

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b. 1934. The Vitamin B Requirement of Man, G. R. Cowgill, The Yale University Press, New Haven.

2. 1937. J. Am. Diet. Assn. 13, 195.

3. 1936. J. Nutrition 11, 383.
1934. Ibid. 8, 449.
1932. Ibid. 5, 307.
1932. Ind. Eng. Chem. 24, 457

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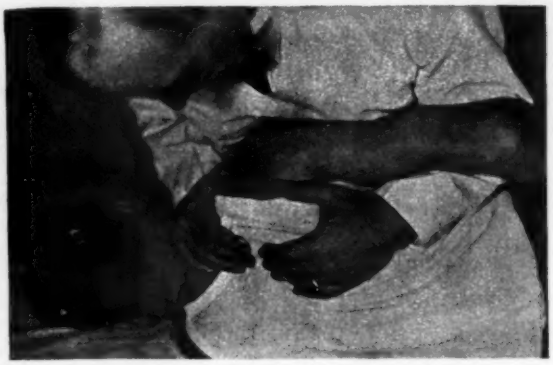

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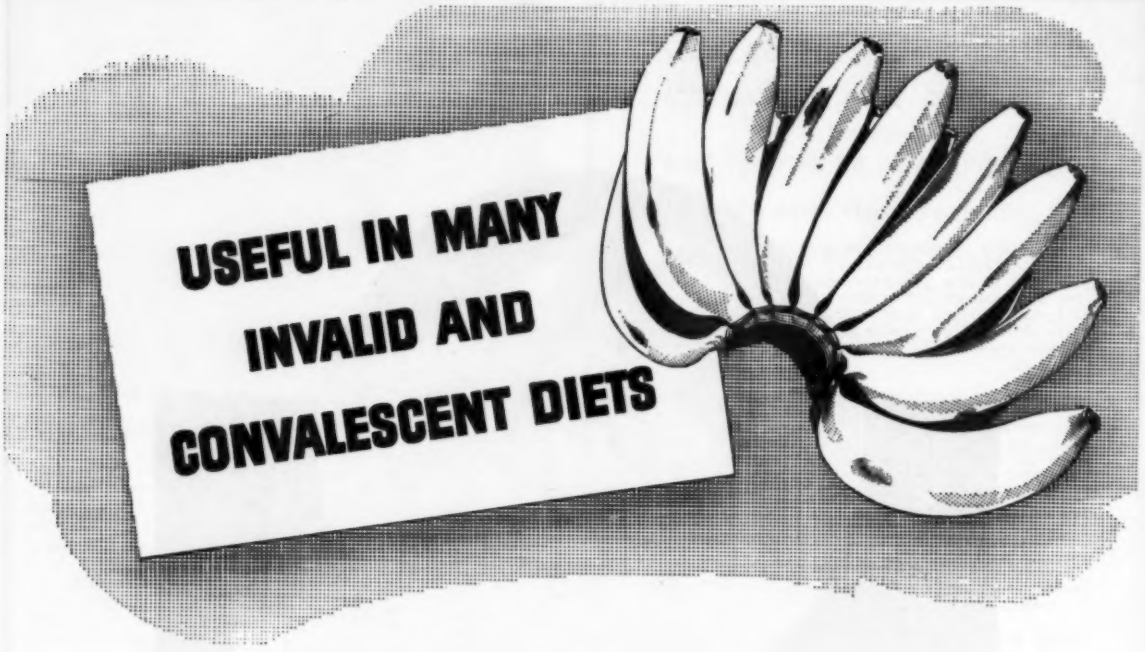

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LITERATURE ON REQUEST...ADDRESS

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Examination and Diagnosis in Acute Diseases*

FRED L. SWOPE, D.O.
Richmond, Ind.

Dr. A. T. Still expressed his reason for writing his "Research and Practice" as the desire "to present the truth as nearly as possible and assist and aid the osteopath to reason from the effect he sees to the cause which in many cases, is unseen. . . . We say disease when we should say effect; for disease is the effect of a change in the parts of the physical body. Disease in an abnormal body is just as natural as is health when all parts are in place."

Osteopathic examination consists of an analysis of *effects* to find the *cause*. Such investigation of the body for the purpose of finding and classifying these effects is known as physical examination. But too many of us have been weaned away from this osteopathic principle by adhering to the methods of the symptomatologist who describes and classifies the symptoms to *name* the disease. We repeat—an osteopathic physician correlates the symptoms to *find the cause.*

It is easily seen how this evil has become so prevalent in osteopathic practice. Our study of most diseases, both in college and in graduate reading, follows the symptomatologist's plan of classifying symptoms to name the disease. And that same plan explains why many good students in college are not successful in early practice. How many times have we seen a typical "book case" of any disease? New graduates are looking for a group of diagnostic symptoms that will name the disease for them; if such symptoms are not present, valuable time is lost in waiting for them to appear. But the osteopathic physician need not wait for this symptom complex to appear to name the disease and prescribe a remedy.

Science is classified knowledge. Osteopathic science is classified knowledge of the physical body—normal and abnormal alike! A complete picture of the health status of the patient is necessary, not a lopsided view of the few chosen abnormal findings without consideration of the remaining normal physiological reactions.

We are attempting to make a distinction here between examination and diagnosis, and one may say that it is unnecessary. Yet we have a conviction that the therapeutic methods of osteopathy can be improved by making a clear and distinct separation of these terms and practices, i.e., examination is not a procedure directed toward a diagnosis (or naming the disease), but a classification of findings to determine the health status of the patient. Examination should lead to a concise, detailed list of all normal and abnormal findings on the first or second visit. It may be added to, or used as a comparison for, later findings and in this way it becomes more valuable in the study and treatment of the case. Diagnosis is the science and art of distinguishing one disease from another, *naming* the disease, if you please—symptomatology classified or grouped to determine the more obvious named disease. Diagnosis is an opinion formulated in the physician's mind as a result of comparing abnormal findings with textbook symptomatology. Tentative diagnosis is the physician's best guess at the earliest possible time during the observation of a case.

Do not mistake my point—I do not criticize the practice of diagnosis. But I do believe that the word diagnosis is used too broadly when it is made to mean simply the arrival at a verdict expressed in a single word signifying some textbook disease entity as the end result of the study of a case record. It is convenient, but it can never express the severity of the illness; it does not indicate the former health status of the patient nor does it indicate his condition following the illness. Writing a diagnosis at the completion of a case history, is like ending a story "and they lived happily ever after." It is a brief implication of what happened.

A boy at the corner newsstand crys "earthquake." Immediately one forms a mental picture of the disastrous possibilities and results, but one must buy a paper and read the details to find out what the actual damage amounted to. The diagnosis may be determined, but the results of the examination are necessary to ascertain the exact condition of the stricken area.

The osteopathic physician should never be satisfied with a named disease. He should be interested

*Delivered before the Internists Section at the Forty-First Annual Convention of the American Osteopathic Association at Chicago, July, 1937.

in the general, total health picture of the patient. The normal parts are just as important as the abnormal parts. When we accept a grouped complex, we are not considering all symptoms; we are not indicating the relative severity of each symptom; and we are not exhibiting any picture of the unnamed parts and reactions. It is not the principle of osteopathy primarily to treat the symptoms developing from pathological conditions. We are attempting to find the cause as elicited from these effects. For the osteopathic physician such procedure is simplified by his knowledge of the physiological and pathological findings of all body tissues and their relationships, one to the other. Is it not in our favor, with the health of our patient as our goal, to direct treatment from the actual knowledge of physical findings rather than basing our therapy on an opinion which is a mental picture derived from the combination of several outstanding symptoms? How much easier it would be simply to reason from effect to cause, consider the relative severity and importance of all findings, and begin treatment before the disease is fully established and robbing the body of its inherent protective powers! We are restricting our discussion to acute disease conditions in this instance. It is assumed that a good case history always precedes a complete physical examination. Then, the finding of all symptoms by all the known methods of examination must be our prime consideration.

It is not part of our subject to discuss osteopathic pathology here, but we cannot overlook the importance and significance of it—because it *is* a part of the great osteopathic concept of disease, and the dual guide of diagnosis and treatment that makes osteopathic practitioners superior to all others of the several schools of the healing arts.

Perhaps we can use an illustration to show what comprises the difference between complete physical examination and symptomatology in making an ultimate diagnosis and prescribing proper treatment. Chart No. 1 shows the symptoms of scarlet fever copied from a standard textbook, to which we have added some probable osteopathic lesion areas. Opposite, we have listed the abnormal physical findings in a patient (Case No. 226) who came under our observation during an epidemic of scarlet fever. This patient had been ill for three days, following a visit to her physician about one week previously when she complained of insomnia. The doctor gave her sleeping tablets which she took for six days. On the morning of the seventh day her husband found her lying unconscious on the bathroom floor, presenting a shocking appearance with swollen lips and face. He thought she was dead. During her three day illness before we were called on the case, three physicians had examined her. The Health Officer had advised waiting another day before posting a quarantine notice.

In comparing the gross symptoms of scarlet fever with those in this case, we noted the similarity. Only minor factors (swollen lips and cheeks, foul breath, dental caries, and nervousness), disclosed anything aside from the osteopathic findings and the fact that the rash was not characteristic. Here is a picture which is greatly magnified by the presence of an epidemic. The symptomatologist must find a name for this group of symptoms.

CHART NO. 1

TEXTBOOK SYMPTOMS SCARLET FEVER	SYMPTOMS OF DRUG POISONING CASE NO. 226
Extreme redness of mucous membrane of mouth, fauces, throat.	Extreme redness of mucous membrane of mouth, fauces, throat.
Red, fungiform papillae of tongue.	Red, fungiform papillae of tongue.
Dysphagia.	Dysphagia.
Tender swellings in neck.	Tender swellings in neck.
Temperature, 102 to 103 F.	Temperature, 102 to 103 F.
Vomiting, early symptom.	Nausea and vomiting first day.
Rash, second day, over clavicles to trunk. No rash on face, forehead or scalp.	Rash, second day, on chest and extremities. None on face, forehead or scalp.
Probable joint lesions—first and second cervical, one or more thoracic associated with rib lesions (eighth, ninth and tenth), first to fifth lumbar.	No marked lesioned regions.
	Extreme nervousness, restlessness, insomnia.
	Lips and cheeks swollen.
	Foul breath.
	Dental caries.

Osteopathically, examination did not show the marked lesions of soft tissues and joints which we expect to find in scarlet fever. The rash was not characteristic. Therefore, the problem was to find the cause for these symptoms. The history of sleeping tablets (which we concluded to be bromides) gave the possibility of an erythema caused by that drug. The history of some previous nervousness and insomnia, dental caries, and foul breath and odor of the patient—with the inflammatory condition of mouth and throat—suggested stomatitis. In short, the patient had a bromide poisoning with resulting erythema and a stomatitis as a result of dental caries and lowered resistance.

Another case for further illustration: In this instance we were at fault, but luck was with us. Case No. 331 was that of a girl, five years of age. The parents had been advised that she was a victim of epilepsy. They brought her to the office to see whether osteopathy would be of any help.

The child suffered nocturnal convulsions or seizures of a mild type, but sufficient to cause much alarm to the parents. Careful study of the history disclosed the fact that she seemed dopey and lethargic during waking hours, and appeared to have some difficulty in walking. Her knees "folded up under her," as the mother explained it, but she usually caught herself and did not fall. Further questioning revealed the fact that the amount of sodium amytal given to this patient had been gradually increased until she was taking 4½ grains daily. The mother finally decided that the more tablets she took the worse her condition was. That simple observation was the reason we were called in on the case.

Upon examination the only pathological conditions which we were able to find were as follows: decreased mental activity and alertness; slight nystagmus of left eye; diseased tonsils; marked constipation; adhesions of clitoris; decreased or absent reflexes; joint lesions particularly in the cervical and splanchnic regions of the spine.

We did not feel that this girl had petit mal, in fact we were not entirely satisfied with our summary of the case, but the child improved with osteopathic manipulative treatment and the elimination of toxins.

Of course, the use of sodium amytal was dispensed with. The child's tonsils were removed and her appetite was greatly improved, and the constipation overcome. Two weeks later she developed a Vincent's infection. Shortly after the Vincent's infection was cleared up, we were called to the home one night at 2 a.m. The child was screaming with pain and we were not able to quiet her. The following morning when we called the left ear was draining. Only then did it occur to us that we had missed the most important finding revealed by our first examination—nystagmus. Suffice it to say here, the patient received proper treatment for the ear infection after that, and within three weeks she had gained seven pounds and has never presented any of her old symptoms. This was a case of labyrinthine nystagmus, although the child had never complained of tinnitus. We did not study this case properly; we did not give the best possible treatment in the beginning, but we did not increase her toxemia and symptoms by sedatives, nor did we make the wrong diagnosis. This is another proof that physical examination and osteopathic pathology and treatment are of primary importance in every case, and the necessary prerequisites for a correct diagnosis.

When we were assigned this topic for discussion, it brought up the same problem that many have tried to solve: How can we prove that a complete examination is necessary in every case of illness? In order to arrive at a definite conclusion based on exact mathematical reasoning, we went through our records and tabulated the acute diseases. In each case we marked the complicating symptoms and findings that did not necessarily enter into the symptomatic picture of the predominant illness. From these figures we made a chart which shows clearly the percentage of accuracy one must expect in pursuing the plan of diagnosis by symptomatology as compared with the findings of a complete physical examination. (See Chart No. 2.)

In the perpendicular column are listed the acute conditions chosen: Acute Abdomen, Acute Chest, Coryza, Influenza, Otitis, Tonsillitis, and Miscellaneous. In the horizontal line are listed organs having complicating or additional symptoms not included in the one-word diagnosis: sinuses, tonsils, teeth, thyroid, heart, abdomen, pelvis, rectum, gallbladder, and others.

In all, we are considering 172 acute cases as they occurred in a general practice where every patient is given a complete examination before any treatment or advice is considered. Seventeen of these cases were acute abdominal conditions which were complicated by involvement of the sinuses (12 per cent), tonsils (64 per cent), teeth and gums (30 per cent), thyroid (5 per cent), heart (17 per cent), pelvis (30 per cent), rectum (59 per cent). Other complications, such as tumors, cancer, varicose veins, hernia, etc., were found in 12 per cent. In these seventeen cases of primary or predominant abdominal disease we have recorded 39 complicating conditions or 229 per cent. As we study the chart throughout, we will find that the acute abdominal diseases, which represent the most serious of our acute cases in practice, also show by far the most complications. The chart also shows many other features which we will not discuss here, but we call attention to the tonsil infection representing 64 per cent of the complications. We believe that that is an important etiological factor. Rectal complications account for 59 per cent, and probably represent the effect of long-standing abdominal pathology. We cannot dispute the fact that these abdominal cases, showing 229 per cent complications, make an important study in therapy. Likewise it is shown that in case of surgical intervention there is much to be done other than the abdominal surgery to insure the patient's return to normal health.

CHART NO. 2

ACUTE DISEASES	NO. CASES	SINUSES	TONSILS	TEETH	THYROID	HEART	ABDOMEN	PELVIS	RECTUM	GALL BLADDER	MISCL.	TOTAL
ACUTE ABDOMEN	17	2 / 12%	11 / 64%	5 / 30%	1 / 5%	3 / 17%	/	5 / 30%	10 / 59%	/	2 / 12%	39 / 229%
ACUTE CHEST	11	3 / 18%	5 / 29%	/	/	2 / 12%	/	/	/	1 / 9%	/	5 / 73%
CORYZA	15	3 / 20%	4 / 27%	3 / 12%	/	/	/	3 / 20%	/	/	/	12 / 80%
OTITIS	7	/	3 / 43%	2 / 29%	/	/	/	/	1 / 14%	/	/	6 / 85%
TONSILLITIS	43	7 / 16%	/	5 / 12%	/	3 / 7%	5 / 12%	4 / 9%	4 / 9%	2 / 5%	7 / 16%	36 / 81%
INFLUENZA	27	/	11 / 41%	3 / 12%	/	3 / 12%	/	3 / 12%	3 / 30%	/	/	23 / 130%
MISCL.	69	11 / 17%	17 / 27%	13 / 20%	3 / 10%	3 / 10%	3 / 5%	7 / 12%	11 / 17%	3 / 5%	3 / 5%	61 / 130%
TOTAL	172	28 / 15%	49 / 29%	30 / 16%	7 / 4%	16 / 9%	10 / 6%	22 / 13%	31 / 18%	4 / 2%	12 / 7%	203 / 118%

In the acute chest conditions we find complications amounting to 73 per cent, still predominated by 28 per cent tonsillar infections. It is interesting to note the apparent absence of pelvic and rectal complications in these cases, which supports our theory that these are actually complications of abdominal disease, rather than etiological factors.

In fifteen cases of coryza we found 80 per cent complication, with tonsils still high, but sinus infections far more important than in any of the other diseases studied here.

The seven cases of otitis show 85 per cent complication, tonsils still holding a slight edge but followed by teeth in this instance. Undoubtedly the lack of symptoms pointing to thyroid, heart, abdomen, pelvis, gallbladder and other parts here is due to the predominance of otitis among children and younger individuals.

The forty-three cases of tonsillitis show 81 per cent complication, 32 per cent of which is divided equally between sinus and ear infections. Teeth and abdominal infections are even with 12 per cent each, and to carry out the plan to a finish pelvic and rectal troubles each hold 9 per cent. Although heart complication is but 7 per cent, it is very important. A distinct organic lesion often follows recurrent tonsillitis.

Influenza (not including influenzal pneumonia) presents 130 per cent more trouble than the named disease implies. Tonsil percentage is high; there is a threeway tie between teeth, heart, and pelvis, 12 per cent each; and rectum 30 per cent.

Miscellaneous conditions include quinsy, acute blood and lymph diseases, acute infectious diseases, etc. We find that the same percentage is found here, as in influenza, although the distribution of the percentages is much wider. This is not surprising when considering the wide scope covered in these sixty-two cases.

We will not dwell too long on this chart. We can plainly see this mathematical proof that one-word

diagnosis does not offer sufficient or specific information to form the basis of treatment. But we would like to point out two facts for emphasis here: We note the predominant percentage of tonsil infection in all these conditions. That is of interest to the ear, nose, and throat specialists, but when we look closer, we will find that it is even more important to the general practitioner. Acute abdominal conditions and influenza both carry 64 per cent tonsillar complication, far more than any other disease. We believe the tonsils are etiological factors in these diseases and a common port of entry. Now, we observe that rectal conditions are also more prevalent in these same diseases—abdominal and influenzal—than any other and we are inclined to the opinion that this is an aftermath of these long-standing pathological conditions in the abdomen, first observed during an acute exacerbation. These two facts together further tend to prove the worth of a statement we all know, that *infections of the alimentary tract travel downward.*

In considering the fact that these figures are purely a record of the occurrence of acute diseases in a general practice, it is interesting to observe how similar the complications are, i.e., tonsillitis, coryza, and otitis show 81, 80 and 85 per cent, respectively. Influenza and other acute diseases show 130 per cent each. We are still emphasizing the fact that the more dangerous or systemic diseases show the greater number of complications.

Taking acute diseases as a whole, we also have a similarity in the individual complications. Sinus and teeth complications show 15 and 16 per cent, respectively. Pelvic and rectal complications account for 12 and 18 per cent of the total, and this ratio is practically even when considering that women comprise a larger part of a general practice. In fact, a recapitulation on this one fact showed us that in women patients alone, the pelvic percentage was 12 and rectal 13 per cent.

It has been our object to present definite mathematical proof of the importance of physical examination in acute diseases. It has been taught in our schools for years; it was the basis of Dr. Still's success and the stepping stone to the foundation of our science; and now it is being promoted in our osteopathic educational literature. Not one good physician of any school can refute the importance of physical examination, regardless of the type of practice he conducts. But to the osteopathic physician it is all-important, it is the basis of his treatment, advice, diagnosis and success.

In OSTEOPATHIC HEALTH No. 94 an answer was given to the question, "What Is Health?" We do not think this explanation for the layman can be improved upon, even for the physician.

> Health is not a material, not something to be put in or taken from the body. Neither is disease a "demoniacal possession"—as held in ancient days—nor an entity (as we have shown in acute diseases, which carry 73 to 229 per cent complication), a something which entrenches itself within the body and demands forcible eviction, as medical speculation has been presuming on one hypothesis and another ever since the possession-of-devils idea abdicated.
>
> Health is the sum of bodily processes working together in natural harmony; the balance of vital energies, the cooperation of tissue with tissue; of organ with organ; the cooperation of system with system; the due and proportionate discharge of each special function of the entire organism—conditions which, as long as operative, render the body not only automatic, self-regulative and self-adjusting to a remarkable degree, but even self-restorative—a phenomenon less marvelous only than the original creation of life.

Since physical examination is practiced to determine the health status of a patient, this explanation is fully descriptive. But it is one thing for me to present this paper and these figures, and another thing to impress upon the general practitioner the necessity for complete physical examination of every patient—and the necessity for keeping a record of them. The records which one keeps are collateral for the loans of advice that he has given his patients regarding health; these records are the proofs of definite, concise, and effective osteopathic therapy. In short, our records of case histories and examinations are the marks of distinction and success as a physician.

We are all familiar with the exact records of insurance companies. It is a vital problem in their business, and experience has taught them the great advantage of good records. In life insurance examinations alone many people have found diseases and disabilities that came as a surprise. It is not a particularly complete examination that one receives when applying for life insurance, but a record is kept. A partial examination with a good record is better than a very complete examination without a record. If there is perfection, it is found in a good examination with a good record.

The professional insurance company for the A.O.A requests that records be kept of patients covering (1) names of previous professional consultants; (2) complete physical condition at time of first or second consultation; (3) record of patient's improvement or lack of improvement with physician's opinion; (4) notation of broken appointments, failure to follow advice, etc.

Why do insurance companies request such records? Because experience in legal protection of physicians has proved that there is too much guesswork, poor memory, and general incompetency among doctors who do not keep records.

If one has been financially successful in the practice of osteopathy without the use of examinations and records, what is the answer to this question: "What have you left behind for the new students and practitioners of osteopathy to prove your ability?" Patients? But you have not left a record of how you pleased them by alleviating their ills. Reputation? But that is yours, not to be passed on to your successor. Money? But that does not convey your thoughts and practices.

The only way one can scientifically improve himself and the future of osteopathy is to keep the record of his examinations and subsequent care of his patients.

There are many osteopathic physicians today who have made many new and important findings, added to the proficiency of their technic, and won many friends and patrons to osteopathy by their methods; but what have they left to guide me and future physicians of osteopathy if that data and their records are incomplete?

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Therapeutic Planning in Acute Diseases*

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Remember, there is a patient that has the disease as well as a disease that has the patient.

The above axiom is especially applicable in the treatment of acute diseases, and we must eternally adapt our treatment to the needs and condition of each patient. However, certain general measures may be outlined in a paper of this kind and varied as the occasion demands.

In discussing therapeutic measures, we sometimes attempt to divide them into two groups: symptomatic and curative. Ofttimes the line of demarcation is quite indistinct and we will not attempt to make such a differentiation in this paper. To keep our thoughts in order, we will list these procedures under the following headings: elimination, diet, hygiene, hydrotherapy, physiotherapy, drugs, surgery, and osteopathic manipulative therapy. They will often overlap, especially the osteopathic portion of the therapy.

Elimination.—In the elimination of the more toxic metabolic wastes and the products of pathogenic microorganisms, the liver plays a most important part. These substances are partly broken down or neutralized by this viscus and then carried out of the body, mainly by the kidneys. Osteopathic normalization of the splanchnic region of the spine, direct manipulation of the organ itself, and mobilization of the diaphragm are the best measures in maintaining proper liver function. Of course, the part played by the lymphoid structures in neutralizing bacterial toxins must be remembered.

Kidney function is often impaired in acute diseases as shown by their inability to hold back serum albumen and serum globulin, while nonprotein nitrogenous and other waste materials are allowed to remain in the body in increased amounts. Osteopathic treatment in the region of the thoracolumbar junction, careful manipulation of the kidneys, and the local application of heat will aid these two structures to act more efficiently. At this time it is not amiss to mention the necessity for a careful analysis of a 24 hour specimen of urine before a patient recovering from an acute disease is allowed to resume his ordinary activities.

During the course of an acute disease, the mobility of the digestive system is usually decreased while the secretions are reduced in amount. As a result, putrefaction rather than digestion of the contents takes place with the probable absorption of toxic substances. Spinal treatment, direct manipulation of the bowel unless contraindicated, liver manipulation, increased water intake, and enemas are usually effective. The value of lactic acid enemas should be kept in mind. In a few cases a laxative may be needed, especially in respiratory diseases where a large amount of mucus may be swallowed.

In considering the skin we must remember that body function in disease may vary greatly from the textbook picture during health. "Goose flesh" during a chill, the hot, dry skin of fever, the "urea frost" of uremia, the odor of perspiration in influenza and smallpox are examples. Vasomotor normalization through osteopathic treatment and hydrotherapy are our main procedures for securing a normal cutaneous condition.

The action of the lungs in elimination of carbon dioxide, thereby ridding the body of katabolites and helping to maintain a normal acid-base balance, is well-known. Proper ventilation, the lymphatic pump, osteopathic treatment of the upper thoracic region and deep-breathing exercises are effective means of aiding the lungs in this work. The increased amount of tissue destruction in many acute diseases, with a tendency toward acidosis, makes this worthy of our careful attention.

Diet.—There are so many varying ideas regarding diet in acute disease that one approaches the subject with some hesitation. Nature seems to point the way. The anorexia usually present indicates that the body cannot properly digest and absorb food. Evidence in the bedpan convinces one that the food decomposes rather than digests.

Strained fruit juices, strained vegetable soup, jello, and custard are my mainstays during the acute stage. Milk is rarely used except in children; it should be regarded as a solid rather than a liquid, since it curds as soon as it enters the stomach. After the acute stage, tissue building or replacement foods, those rich in proteins, vitamins, and essential minerals, are required, followed later by the energy-producing carbohydrates and fats. The common practice to withhold meat for a long period is, to my mind, unjustified.

Hygiene.—In acute diseases the most important thing under this heading is *rest.* We all know the bad results, especially in influenza, in the patient who "keeps going" after the onset of an acute infection. Sleep is also essential. A thorough osteopathic manipulative treatment is the best hypnotic, though in a few cases drugs may be needed. If pain, which is not relieved by osteopathic treatment, prevents the patient from resting or sleeping, an analgesic or opiate may be necessary.

Ventilation of the sick room, while keeping the patient comfortably warm, is important. Bathing, the alcohol rub (taking care not to chill the patient), clean, smooth linen, and cheerful surroundings are all helpful. The regulation of visiting time and the number and type of visitors is a frequently neglected item.

Hydrotherapy.—At the onset of an acute condition the hot tub bath is of value. It aids nature in developing a "friendly fever" in many cases and equalizes the deep and superficial distribution of the blood mass. It increases temperature and metabolism, aids elimination, and has a sedative action. The hot, wet pack does the same thing in the patient unable to enter the tub.

For hyperpyrexia, the cold sponge bath (tem-

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perature of 70 to 80 F.) with friction is very effective. An enema of cool or tepid water is often of greater value than bathing for high fever.

In ordering hydrotherapy, we should specify the frequency, temperature, duration, use of friction, and aftercare. If used properly, these measures are of great value in acute diseases.

Physiotherapy.—The external application of heat by hot water bottles, electric pads, infra-red lamps, is often helpful. The production of heat deeper in the tissues by the use of diathermy or short wave is an excellent procedure in many acute conditions. Like many other valuable measures this must be used with judgment and the reaction of the patient carefully watched. Ultraviolet light treatment is of great value during convalescence, but rarely used during the acute stage. Erysipelas is one acute disease where this modality is our most valuable measure.

Drugs.—Of the true drugs we have little need in acute diseases. An occasional laxative, hypnotic, analgesic or opiate almost covers the list. In this we agree with the best "old-school" authorities, but use osteopathic treatment in place of their "masterful inactivity."

Some of the biologics are of value in acute diseases. If a child of ours developed diphtheria, most of us would prefer to use both antitoxin and osteopathy, though we know from experience what can be done by osteopathy alone. I have been disappointed in the use of biologics in scarlet fever, erysipelas, pertussis, and pneumonia. It is very easy to "kid ourselves" in the use of foreign proteins and similar preparations; I use them only in gonorrheal salpingitis. Endocrine therapy during convalescence has, as a whole, been disappointing to me.

Surgery.—In most acute diseases, as we commonly use the term, paracentesis tympani is the only surgery frequently required. Pleural effusion or empyema, which rarely occurs under osteopathic care, may require operation, especially the empyema. A few other instances might be listed, but this valued branch of the healing art does not need to be used in most of these cases.

Osteopathic Manipulative Therapy.—Our main objective in giving an osteopathic treatment to a patient with an acute disease is to normalize, as far as possible, the spine and ribs. The various technics for doing this are part of every osteopathic physician's therapeutics. However, there are many other osteopathic methods of favorably affecting the body in acute diseases and we propose to discuss some of these in the remainder of this paper.

(a) Antibody formation and the neutralization of toxins: In many acute diseases the regional lymph glands are involved and early, judicious manipulation of these glands will send a small amount of toxin into the circulation while the body is still in good condition to respond by the formation of antitoxin. Lane[1] and Castlio and Swift[2] have shown the part played by the spleen in antibody formation and the benefits resulting from manipulation of this viscus. We have already referred to the part played by the liver in neutralizing poisons and preparing them for elimination; we will merely repeat that direct treatment of this organ is an important part of osteopathic manipulative treatment in acute diseases.

However, unless we secure fairly normal circulation of blood and lymph in the diseased area, as well as the rest of the body, these other measures will be of small value. As soon as a circulatory stasis occurs, local acidosis takes place. Osteopathic normalization of the nerve supply of this area, by spinal manipulation, is of paramount importance in destroying pathogenic microorganisms and removing toxins formed by them or by degenerating tissues.

(b) Changing the distribution of the blood mass: We should all read frequently the article of this name by Charles Hazzard, D.O., in the A.O.A. JOURNAL of May, 1931. I shall not presume to condense his masterly description of the changes in the circulation resulting from osteopathic manipulation of the spine, ribs, diaphragm, abdomen, pelvis, and cervical structures. We all do some of these things in our everyday work, but the study of such an article makes us realize a little better the possibilities of our system of therapy.

(c) Use of the thoracic or lymphatic pump: Both names modifying the word *pump* are inadequate, since much more than the thorax is moved and much more than lymph is pumped. The value of this form of treatment is well-known, although the drain upon the operator's time and energy limits its use to a certain extent. I have found suppurative inflammation, increase of pain, and extreme dyspnea the chief contraindications. If the degree of force and the length of the treatment are carefully regulated according to the patient's condition, it may be successfully used in most acute diseases.

(d) Spinal traction: In those acute diseases showing evidence of meningeal irritation, gentle, intermittent spinal traction seems to be of value. When we recall that cerebrospinal fluid not absorbed by the cerebral venous sinuses by way of the arachnoidal granulations is absorbed at the points of exit of the spinal and cranial nerves, we see a very good reason why this procedure is valuable.

(e) Diaphragm: Mobilization of this structure is of great importance in acute as well as in chronic diseases. The normal "up and down" movement has a marked effect upon thoracic and abdominal structures especially. On the other hand, excessive amounts of gas in the abdomen or fluid in a pleural or pericardial sac may limit diaphragmatic movement.

In treating the diaphragm, we first make sure that the middle and lower ribs are normalized, then stretch the quadratus lumborum muscle and finally crowd the diaphragm upward and laterally beneath the costal arches. Forced expiration exercises are of marked value to supplement the above treatment.

(f) Nerve centers: In some cases we may wish to secure quick results by working on nerve centers, and then more lasting effects by treating spinal centers. By working on these nerve centers we may affect blood distribution, glandular secretion or smooth muscle activity singly or collectively. It is difficult to cause a normally functioning structure to depart from this normal by such manipulation of nerve centers, but an abnormal structure will usually respond by tending toward its normal.

Direct work upon the cervical ganglia and carotid body has a marked effect upon the heart and the cerebral circulation. Manipulation of the celiac or solar plexus is of value in such conditions as shock,

where venous congestion of the splanchnic vessels is marked. Pressure over the posterior sacral foramina is helpful in many pelvic conditions, for example, tenesmus in acute diarrhea. Suboccipital pressure, following cervical normalization, is helpful in reducing fever.

(g) Pressure to relieve pain: Lumbosacral pressure will relieve dysmenorrhea. Pressure on the sciatic nerve as it passes behind the neck of the femur relieves sciatica. Pressure over the infraorbital foramen and the supraorbital notch relieves pain in sinusitis. Pressure at the lumbodorsal junction and over the kidney anteriorly in renal colic will help to relieve pain while waiting for an opiate to take effect. These are examples though not all apply to acute disease.

(h) Cranial pressure: We do not yet have a very good knowledge of this procedure or its applicability to acute conditions. We should keep an open mind, learn all we can about it, and apply it to our patients cautiously and study the results. I have obtained very gratifying results in acute sinusitis with this form of treatment.

(i) Blood cells: Osteopathic manipulative treatment, especially of the spine and ribs, tends to aid the production of leucocytes in those acute diseases where leucocytosis is a part of the body reaction to the condition. Manipulation of lymph glands, liver, and spleen probably aids the reticulo-endothelial tissues in these organs to produce mononuclears and the lymphoid tissues to produce lymphocytes. During convalescence there is a less marked tendency for leucopenia and anemia to develop if osteopathy has been employed.

In this article I have endeavored to review some of the procedures we may employ in treating acute diseases. I have emphasized the osteopathic treatment of these diseases because, after much groping around in the early days of my practice, this is the type of treatment I now find most dependable. To my mind the outstanding feature of osteopathy is that the more the doctor and the patient know about it the more dependable they find it to be.

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Hypertension*

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Considering hypertension as described by various writers will most certainly leave one very much undecided as to its origin, and what to do about it. Much has been written on the subject, yet there still remains a degree of confusion and uncertainty which I cannot hope to clarify in a single paper. It will not be my aim to disparage the work already done, but the purpose will be to place the presently accepted ideas of cause and effect in a light more in keeping with the osteopathic concept of body abnormalities. There is little occasion for the osteopathic profession to accept explanations of hypertension which, in several decades, have not resulted in a successful treatment.

The term *hypertension* in its ordinary sense is applied to any condition in which the blood pressure rises above, and is maintained at a level higher than, the accepted average normal, these limits being placed at or near 145 systolic and 105 diastolic, although the limits appear to be as flexible as the opinions of the various writers. These figures which are applied to define the upper limits of normal blood pressure have resulted from the averages obtained from the records of physical examinations of the major life insurance companies, and they represent only a select group of healthy individuals. Much of their value is lost when they are applied to the abnormal or sick person. A diagnosis cannot be based on manometer readings alone. Space will not permit the introduction of case records in this paper, but within my own experience I have seen hypertension with a systolic reading of 126, and on the other hand, hypotension with a systolic of 165.

From the consensus of previous writers have come the following conclusions:

Attacks of increased blood pressure may occur with various acute conditions, such as nephritis, eclampsia, metallic poisoning, uremia, etc., but in these conditions the elevation is acute and other symptoms predominate.

The high blood pressure with which we usually meet is of a more insidious nature, its discovery resulting from general examination. Since the patient has not suspected the condition, we have no history concerning its beginning or duration. Usually the condition is established, manifesting secondary developments. Listed prominently as causes, but in my opinion more often the concomitants of established high blood pressure, are chronic nephritis, arterial wall disease, alcoholism, heart disease and various disorders of the metabolic processes.

In addition to the high blood pressure associated with any of the above conditions, we often see those cases which show a highly elevated pressure, but in which careful examination fails to disclose pathological changes in associated organs. To this type has been given the name *essential hypertension*. This is considered by some of the more recent writers to include the greater number of high pressure cases. Under this name have been included all types not attributable to organic disease, and prominent among the explanations are irregularities of the endocrine system, particularly the adrenals, thyroid, and gonads; this being particularly applicable to those cases which begin with, or shortly after, the menopause. In addition, much blame has been placed upon overwork, emotional stress, dietary transgressions, lack of exercise, etc., the attitude being that if high blood pressure exists, all habits are bad ones.

Considering organic changes related to hypertension, we acknowledge these facts: While about half of these cases show a reduced kidney function and later an impaired organ, the majority of the cases do not show organic kidney disease. If the organic change follows impaired function, it would appear

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more probable that the organic change is a result, rather than a cause.

Neither can arterial wall disease be looked upon as a dependable cause or explanation. Sclerotic or thickened walls are present with about equal frequency in both normal and abnormal blood pressures. In regard to arterial wall change as a result or effect of increased blood pressure, the following is quoted from authoritative works on pathology:

> If for any reason the wall of the artery be weakened and yield to the blood pressure, it is at this point in the intima that the new tissue forms, and restores the lumen to its natural caliber with restitution of the rate of blood flow. In all these cases the intimal thickening is not inflammatory, but has the nature of a replacement hyperplasia in walls damaged and weakened in various ways. Any long-standing or continued disturbance of the normal balance between the blood pressure and the resistance of the vessel wall apparently may lead in a variety of ways to arterial changes.[1]

Heart changes are, for the most part, compensatory, the size and the ability of the organ increasing proportionately to the increase of its load.

Alcohol and other dietary transgressions are worthy of serious consideration, particularly from the standpoint of treatment, their value as etiologic factors being limited to the degree of toxemia they produce in individuals having faulty metabolism or elimination.

If we accept the probability that most high blood pressure cases are in the class previously referred to as essential hypertension, and couple with it the established fact that these various concomitants, namely, thickened or sclerotic arteries, kidney disorders, cardiac hypertrophy, etc., are observed singly or severally in cases well advanced or long standing, we can reasonably assume that in the majority of instances the organic changes are effects rather than causes.

This presumption makes it necessary that we establish a primary cause which logically may be applied to any upward departure from normal of the blood pressure.

Normal blood pressure is the degree of force maintained in the arterial system which adequately takes care of the circulation of the blood without necessitating cardiac overexertion.

In taking the blood pressure in the brachial artery it is well to remember that the recording in millimeters of mercury not only informs us of the degree of lateral pressure of the blood stream against the vessel wall, but it also represents the amount of resistance which the column of blood must overcome before it can reach the capillary field and be liberated into the venous system.

The maintenance of this pressure is particularly dependent on the pumping action of the heart, the quantity and quality of the blood, the tension of the vessel walls, and peripheral resistance.

While it is both difficult and unnecessary to place a comparative valuation on the importance of any of these factors, we may apply certain facts of physiology which lead to reasonable conclusions.

The frequency and strength of the heart beat are established and maintained by the balance of the impulses entering it through the branches of the vagus, (the inhibitor), and the sympathetics, (the accelerators). Of these sympathetic branches which supply the heart, there are two types. One type increases the frequency of the beat, but does not increase the blood pressure. The other type increases both the rate of the heart and the blood pressure, but the blood pressure rise is temporary unless there is a corresponding stimulation of the vasoconstrictors.

The quantity and quality of the blood is the most stable factor of the three mentioned. It is true that the water balance of the body is subject to frequent change, especially in those conditions creating a depletion of the alkali reserve. But since only a small percentage of the total water content of the body is enclosed within the circulatory system, it is only in those conditions where there exists a great excess of fluid retention that it can be credited with influencing a rise in blood pressure, in which case the greater rise is believed to be in the venous circulation.

The resistance, or tension, of the vessel wall is maintained by the musculature, activated by the vasomotor nerves, which are, for the most part, sympathetics. The following quotations concerning vasomotor control are from Pottenger:[2]

> Vasomotor control from the medullary center proceeds in part through such cranial nerves as the vagus (Xth) hypoglossus (IXth) and trigeminus (Vth), but for the most part the connection is through the cord and the spinal centers [P. 227]. The vasomotor nerves leave the cord by the anterior roots throughout the length of the thoracico-lumbar segments which give origin to sympathic fibers (Ist thoracic to the IVth lumbar). Therefore, connector fibers are found in all white rami . . . The splanchnic vessels are of the greatest importance in the maintenance of blood pressure and the circulation of the blood [p. 225]. The splanchnics are the most important vasomotor nerves of the body. . . . The sympathetics are unopposed in nearly every portion of the body in their vascular control [p. 223]. . . . Whether they are genuine dilator fibers in the sympathetics is questionable [p. 229].

Downing[3] says, "Though it is thought that efferent sympathetic vasodilator fibers take origin in nerve cells in the ventral horns of the gray matter and pass outward through the ventral roots of the thoracic and lumbar nerves, yet this opinion has never been satisfactorily demonstrated."

Arterial wall tension, or tone, then, is not the result of a balance of opposing impulses, as in the cardiac accelerators and inhibitors; but constriction and dilatation of the vessel wall, in so far as sympathetic nerve impulses are concerned, are varying degrees of contraction of the musculature of the vessel wall, depending on the character and strength of the impulses entering it.

As previously stated, this review has not been for the purpose of establishing a comparative valuation of the factors maintaining normal pressure. The purpose has been to show that, of these more important factors, wall tension is the one more subject to abnormal influence than any other and manifests the greater possibility of departure from normal function.

Since the wall area increases with each branching, this area is many times greater in the peripheral vessels than in the central or major arteries. It is also true that the comparative quantity of muscle tissue in the arterial wall is increased as the size of the lumen and the thickness of the wall decreases. It appears, then, that stimuli of equal strength would produce a greater reaction in the peripheral circulation than in the central circulation.

Primary hypertension, then, is primarily due to increased tension or constriction of the arterial walls, particularly the small arteries and arterioles, and later involving a greater part of the circulatory system; such increased tension being due to excessive stimulation of the vasomotors. These abnormal impulses have their origin in either the sympathetic cord or the spinal cord segments with which its connector fibers communicate and may be due to osteopathic spinal joint lesions, local changes in nerve tissue, toxic irritants, or reflex irritation. The degree of increased pressure or tension is dependent on the extent to which the vasomotor areas are involved, or their degree of irritability, coupled with the ability of the heart to compensate for the partial obstruction of the circulation.

Those cases demonstrating thickened arterial walls, hypertrophied hearts, and other organic changes are considered as illustrating the varying involvements as the condition advances.

This reasoning offers the probability that primary and essential hypertension are synonymous, and until those cases now classed as essential hypertension are subjected to research which will definitely prove their origin, this explanation offers a credible basis on which to establish a planned treatment.

Since symptoms and diagnosis have been widely discussed in recent journals, this paper will dispense with those details. However, brief mention is given some of the more important points.

Systolic rises, lasting temporarily, in which there is no rise in the diastolic pressure, can often, in the absence of other symptoms, be credited to emotional stress. If the systolic rise is permanent, the probable cause will be excessive cardiac stimulation of either nervous or toxic origin.

With a great increase in both pressures, of a permanent nature, we can consider it general circulatory hypertension. The higher pressures are, as a rule, seen in those cases in which arterial wall changes, in the organic sense, have not yet taken place. This condition is credited to involvement of both the vasomotors and the cardiac accelerators. Individuals in this class, provided the kidney can withstand the excessive pressure, are not in immediate danger. Apparently, with the advance of the condition there is a partial loss of the constrictor ability of the arteries, and a fixation of the size of the lumen. This, in the presence of decompensation in the later stages, results in poor terminal circulation.

In the presence of an increased systolic pressure and a reduction of the diastolic, we first suspect aortic valve disease. If this condition is eliminated, the symptoms point toward a double involvement of the vasomotor system, in which the peripheral arteries are in a state of hypertonus, and the central, or major, vessels are dilated. The systolic rise is the effort of the heart to overcome stasis in the larger arteries.

An elevated diastolic pressure which does not show a reduction under treatment which produces a lower systolic pressure suggests organic involvement of the kidney or the arterial wall.

A decided drop in the systolic pressure without a reduction of the diastolic pressure is suggestive of decompensation. In established cases where organic changes have taken place, a high diastolic pressure and low pulse pressure are considered as unfavorable signs.

The work of Erdman,[4] as reported in THE JOURNAL OF THE A.O.A. by Anderson,[5] is an important addition to knowledge concerning hypertension. The opinion of Erdman is that in addition to peripheral resistance and cardiac output, the next factor in line of importance in producing abnormal blood pressure and circulation is abdominal gas. In this work his effort is to differentiate hypertension and hypotension, either of which may exist regardless of the blood pressure at any given point.

The conditions are to be differentiated according to the reaction obtained from specific vasomotor stimulation, the reaction, in the presence of other factors, designating either anemia or hyperemia of the vascular areas of the spinal cord. Treatment is based on the indications of these tests.

Erdman places the majority of the abnormalities in the hypertension class, to which general manipulative treatment is indicated, but warns that proceeding with treatment without first establishing the condition of cord circulation may lead to undesired results. The work is deserving of further individual study.

The changed attitude of the medical profession toward hypertension is illustrated by the recent turn toward surgery. The sympathetic nervous system has come to be recognized by the leaders as the principal causative factor in numerous cases. The surgical treatment consists of severing the communicating fibers between the central and sympathetic systems, clipping the sympathetic nerves themselves, and removal of the celiac ganglion. Crile,[6] of Cleveland, reports beneficial results in the majority of twenty-seven cases so treated, with but 11 per cent mortality.

While there has not been a sufficient lapse of time to determine what the terminal effects of these procedures will be, these recent reports show that the allopathic mind is becoming more cognizant of the important part the sympathetic nervous system plays in circulatory abnormalities. While operative work indicates at least a partial recognition of the true causes, the treatment appears too radical to permit popularity, especially when manipulative treatment is accomplishing like results.

Osteopathic treatment in hypertension is not a matter of type of technic used, but the use of the physician's judgment as to the type of treatment indicated in a particular case. Any case which, after reasonable time, has failed to show a change for the better, indicates a need for changed procedure.

The general care is much the same as that in other chronic disorders, and is varied with the degree of involvement. Patients are warned against excitement, emotional disturbances, physical exertion, exposure to cold, etc., the intention being to avoid those things causing vasoconstriction.

In the majority of cases dietary supervision is required, especially with organic involvement of the kidney. In practically all cases it is wise to reduce the quantity of food. Stimulants are to be avoided.

Any agent which may be acting as an exciting or contributing cause must receive consideration. These are, for the most part, different toxemias, originating particularly in the liver and the colon, and sometimes in the more obvious of the focal infections. The en-

docrinopathies, including involvements of the liver, gonads, and thyroid, offer opportunity for specific treatment when specifically involved.

Any spinal joint lesion, regardless of its location, may be a causative factor in the maintenance of irritation in the vasomotor area, and therefore must be corrected. While no single segment, or small group of segments, presents the probability of specific osteopathic lesions common to all cases, joint derangements are usually found. Usually their presence is manifested by regions of limited motion, with varying degrees of sensory disturbance and muscular contraction.

Although the entire thoracic, and most of the lumbar, regions are in direct connection with the spinal vasomotors, my experience has been that the most frequent and the most noticeably involved region includes the second to the ninth thoracic segments. This is explainable on the basis of a double involvement of areas of origin including the vasomotors and the cardiac accelerators.

Most cases, at the beginning of treatment, seem to respond best to what is often termed soft tissue treatment, the extensiveness of the treatment increasing with the progress of the patient. The degree of relaxation which may be obtained in a single treatment cannot be measured, and the plan followed is to carry this treatment to the point where tissue relaxation reaches its maximum. Manipulation beyond this point is overtreatment and produces added irritation, manifesting itself in either an increased pulse rate or elevated systolic pressure, or both.

In those cases showing a high degree of irritability early treatment is often limited to the most gentle manipulations, possibly a brief lifting of the thoracic cage or slight traction on the thoracic spine. As tension decreases, local circulation is improved and irritability lessened, permitting more extensive treatment and necessary corrective work. This plan of procedure is followed also in those of advanced years or debility.

Some observers have voiced the opinion that cervical treatment, by irritation to the cervical ganglia, has the effect of undoing any benefit that may have resulted from thoracic treatment. Numerous cases, however, are accompanied by a cervico-occipital sensory disturbance with considerable pain, tenderness, and muscular contraction in the upper neck. Often rotation lesions are to be found in one or more of the upper cervical articulations. Whether these lesions are primary or secondary, their correction is accompanied by both symptomatic and systemic benefit.

While this paper has not dwelt on the conditions often associated with hypertension, such as nephritis, arteriosclerosis, etc., they are important considerations, regardless of their position in cause and effect, and any successful treatment must recognize their entire possibilities. While the fact of their presence reduces the probability of complete success in treatment, this does not mean that osteopathic manipulative treatment is not capable of beneficial results. To the contrary, in advanced or complicated hypertension manipulative osteopathy is far superior to any form of therapy which produces a lowered blood pressure at the expense of further retarded circulation and lowered vitality.

Regardless of the type with which we are dealing, or the degree of change or advancement which has already taken place, our treatment can be considered successful only when we have brought the circulation nearer normal and at the same time reduced arterial tension and cardiac effort.

Since hypertension is usually a well-established condition before treatment is begun, it is hardly possible to estimate correctly the quantity of treatment which will be required, or what degree of permanency in results may be anticipated. These cases, or types of cases, are individual, and treatment and prognosis are dependent largely on the changes which have already taken place in the circulatory system and associated organs. But with the cooperation of the patient in periodic examinations, and the ordinary supervision of diet and energy output, osteopathic manipulative treatment offers the most logical method of controlling or overcoming hypertension.

Weber Building

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AN HERCULEAN NEW YEAR'S TASK

Seventy to ninety persons in a few days died of a poisonous drug, in most cases prescribed by physicians. We have no record of criminal action against any doctor, or of hysterical personalities in newspapers.

Contrast this with one patient who died on an osteopathic treatment table. Practically three months later the coroner issued his findings, calling the doctor, "utterly heedless," "reckless and guilty of gross negligence." The states attorney had him arrested. Screaming streamer headlines in newspapers captioned stories which, in the best witch-hunting tradition, shrieked the words, "aghast," "shocking details," "horrible death," "the same fatal injury which results when the trap of the gallows is sprung and the murderer is sent hurtling to his doom."

Too long have we complacently bowed to attacks by public officials and yellow news writers, who proceed without knowledge or investigation to destroy the reputation of individuals, groups, and the whole profession.

At last the Committee on Public and Professional Welfare has been formed to direct our rank and file in building up throughout our entire civic structure a proper understanding and appreciation of the truth about osteopathy and its practitioners.

It costs money to organize and direct this work in which every man and woman in the profession has a part. It has been well started, on the basis of contributions from individuals, many of whom have pledged sums of $100 annually for three years, and others less amounts.

But some 8,000 osteopathic men and women have not put in a cent. There is a task for the New Year. Let each, now, without further urging, contribute what he can, and help end this frightful discrimination. LET'S FINISH THE JOB!

Angina Pectoris With Special Reference to Its Mechanical Causes*

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Definition.—Angina pectoris is not a disease in the true sense of the word, but a clinical syndrome characterized by paroxysmal attacks of pectoral or precordial pain, syncope and a sensation of intense anxiety.[1] It produces death through the vagal inhibitory mechanism of the heart.

Incidence.—Angina pectoris is an affection of the intellectual, not of the laboring, classes, being most common among educated and emotional people. It is very common in the Jewish race. The clinical outbreak of the malady occurs most frequently in men at the time of life when senescence has begun but before senility is established, usually in their fifties. It occurs therefore most frequently when arteriosclerosis has begun and the health of middle age has begun to wane. When once old age is established with calcification of the coronary arteries, the symptom complex of angina does not so infrequently occur.[2]

The incidence of angina pectoris is definitely increasing in both sexes, especially in women. The male is much more frequently affected than the female in the ratio of three to one. But about a century ago the disproportion was much greater. The emergence of women from a sheltered life at home in recent years and their entrance into strenuous competition and strain in business and professional life may be in part responsible.[3]

Etiology and Pathology.—As previously stated, angina pectoris is not a disease but is really a group of symptoms with no one unifying pathological lesion as an explanation. Even at the present stage of a supposedly advanced science of medicine the actual cause of angina pectoris is not known although theories as to its etiology are legion.

From the ordinary medical standpoint the various theories of the cause have been classified by Osler under four heads as follows: neuralgia; cramping of the heart muscle or of its parts; weakness of the muscle with the consequent dilatation resulting in stretching of nerves; and myocardial ischemia from coronary disease. To these possible causes must be added the theory that the pain is due to tension on the nerves of the first part of the aorta.[4] The two theories that today have the widest acceptance are those having to do with changes in the coronary artery as the important feature, and those in which the aorta has the predominant part.[5] According to the coronary view, the pain is due to muscular spasm of the heart when it is subjected to strain and is insufficiently supplied with blood due to disease of the coronary artery, the left one being the more commonly affected. According to the aortic view, the pain is due to a sudden stretching of an inflamed aorta, the aortitis often being due to a syphilitic infection. In cases coming to autopsy, a variety of lesions may be found, none of which are characteristic. Of these, the chief are syphilitic aortitis and myocardial fibrosis secondary to arteriosclerosis. In syphilitic aortitis there is often a marked degree of coronary occlusion due to an intimal plaque producing obstruction at the opening of the artery.

At the same time it is doubtful whether disease of any one structure can explain all of the cases of angina pectoris.[6] There is little question that diseased coronary arteries and the diminution in the lumen of the coronaries is a very great factor in the immediate cause of death, but death in one-third of cases that have come to post-mortem has occurred with healthy coronaries, and in many instances with healthy cardiac muscles.[7]

The theory often accepted that pain is due to spasm or to anemia of the cardiac muscle seems highly improbable, especially since in many cases of even severe attacks of angina, the pulse does not vary in frequency, force or tension until just before death. In angina due to coronary thrombosis the pulse is often very rapid and may be irregular or small and feeble, but coronary thrombosis is not the usual lesion underlying the anginal attack. If there were a spasm of the muscle, or if there were a deviation from the normal in its contractile power, it would seem most probable that there would be evidences of it in the pulse. Not all cardiac pain is of a single origin, and the morbid processes which produce myocardial exhaustion or disease do not account for the intensity or kind of pain evident in anginal attacks. These processes in the myocardium produce dyspnea and breathlessness, but do not produce the anginal pains. The absence of dyspnea is a striking fact in the symptom complex of angina pectoris.[8]

From the medical aspect all of these findings lead to the conclusion drawn by Boyd, who says: "It seems best to finish where we started and to regard angina pectoris as a clinical entity with a varied pathological basis, but usually related to partial occlusion of the coronary vessels and the resulting myocardial spasm."

But from the mechanical, or osteopathic, standpoint we must consider the heart as a part of a complex nervous machine rather than as a single isolated component, into which we must look for the etiological basis. The ofttimes startling results that are secured through the use of osteopathic therapy would seem to indicate that we have an important concept to offer concerning the etiology of angina pectoris.

Osteopathic lesions appear so frequently and so constantly in these cases that they certainly must figure largely as an important etiological factor.[9] The heart is easily and seriously affected by joint lesions. Experimental animals very distinctly show the effects of chronic lesions of the third and fourth thoracic vertebrae upon the heart. The animals lesioned in this region show an irregular pulse, variable but always low systolic blood pressure, and an increasing edema of the tissues. On post-mortem examinations these animals have always a greater amount of body fluid than do normal control animals. Strips of the

*Grand prize-winning essay for 1937 in contest among students in osteopathic colleges. [See p. 198 this issue of THE JOURNAL, containing announcement of prizes offered to both undergraduates and graduates in 1938.—Editor]

heart muscle are much more extensible than are control strips of normal heart muscle, are less elastic and much less strong. Here is offered a basis for Osler's theory that the anginal pain might be produced by dilatation of the heart muscle and consequent stretching of the nerves. On microscopic examination minute areas of hemorrhage per diapedesin are found in the ventricular walls of the lesioned animals but not in the ventricular walls of the controls. The cardiac muscle fibers of normal hearts show striations, not so distinct as those found in skeletal muscles, but easily recognizable. The cardiac muscle fibers of the lesioned animals show much less distinct striations. Occasional muscle fibers show cloudy swelling in the lesioned animal but not in the controls.[10] Since osteopathic lesions are constantly accompanied by metabolic disturbances in the spinal cord and sympathetic ganglia, is it any wonder that such perversions should result from nerves having their origin in, or passing through, the affected segments or ganglia?

The sympathetic nerves to the heart arise in the upper five or six thoracic segments of the cord and pass as white rami communicantes to the cervical ganglia, the stellate ganglion, and the ganglion of Vieussens from which structures gray postganglionic fibers go directly to the cardiac muscle cells. The parasympathetic nerves to the heart arise in the vegetative nucleus of the vagus and pass as preganglionic fibers by way of the superior laryngeal, recurrent laryngeal, and thoracic branches to Remak's, Ludwig's and Bidder's ganglia.[11] It is believed that the vagus contains constrictor nerves going to the coronary arteries.[12]

The innervation of the heart and the aorta, and the sensory pathways from these regions are not worked out, but the evidence seems sufficient to justify belief in the existence of a sensorimotor reflex produced by the nerves running from and to the heart in the sympathetic and vagus systems. There is no question that the distribution of pain in the anginal attacks can be explained by the anatomical distribution of known nerve fibers.[13] A sensorimotor reflex arc is present and one expression of its efferent action is seen in the vagal inhibition of the heart. The condition of the coronary vessels, probably, or of the myocardium, may turn the scales for life or death. Hearts which possess healthy muscular systems and undegenerate coronary vessels resist best the vagal inhibition and a healthy heart will often overcome the attack even though it be serious, but a heart crippled in its blood supply or in its myocardium, has lost its power to overcome the fatal inhibition.[14]

It is usually observed that in cases of angina pectoris we find a spine extremely rigid throughout, especially from the neck on down to the lumbar junction with the sacrum.[15] Acute vertebral lesions in the cervical and upper thoracic spine, and especially rib lesions (first, second, third and fourth thoracic) on the left side may provoke anginal pains and signs of disturbed vasotonus, and may excite vasospasm of the coronaries. In true angina these lesions bear a definite contributory relation to the existing pathology.[16]

Regarding the immediate cause of the onset of an attack of angina pectoris, there are numerous factors capable of arousing the pain. The oppression may be brought on by excitement, emotion, a full meal, swallowing, exposure to cold, vivid dreams, rapid walking, or often merely by walking against the wind or up a slight grade. Unknown causes may precipitate an attack during absolute rest, but it is most often produced by physical exertion and exercise.

Symptoms.—The onset of an attack is sudden, but may be preceded by a vague sensation of oppression. The sensation of angina pectoris consists of a feeling of pressure, of a vise-like grip and crushing of the chest, or of burning or grinding pain. It is smooth, or continuous, in the sense that it does not fluctuate in intensity from moment to moment or throb, though there may be slow changes in intensity. If the subject stands still, the discomfort or pain goes away in a minute or two.[17] The pain is prone to radiate extensively, usually traveling down the left arm to the elbow or wrist, or into the fingers, especially along the ulnar side of the forearm and into the ring and little fingers. Less often it reaches the right upper extremity, the back of the neck and down to the thigh. Rarely, it is reflected to the epigastrium or into the region of the gall-bladder or appendix. It should be noted that true anginal pain is transmitted chiefly to the areas of peripheral distribution of the upper four thoracic, the eighth, third, and second cervical and the fifth cranial, nerves, and that the application of counterirritants to these areas often relieves this symptom.

Upon occurrence of the attack the patient assumes a rigid posture and no unnecessary movements are made. The face is ashen and covered with cold sweat, and the eyes protrude with deepening of the lines of the face. The attack may be so mild as to amount to nothing more than an uncomfortable sense of substernal constriction or oppression of momentary duration. It may be of any degree of severity from this to the most agonizing, but pain of very great intensity is rather exceptional.[18] The attacks usually cease with cessation of effort by the patient, and rarely last longer than a few minutes. Attacks lasting longer than an hour probably indicate coronary occlusion.

Course and Prognosis.—The course ranges from mild short attacks occurring at long intervals over many years with death not infrequently the result of a noncardiac cause, to severe, long and frequent attacks terminating in coronary thrombosis or sudden death within a few days or weeks of the onset of the symptoms. The severity of symptoms is certainly no index of the gravity of the prognosis.

The average length of life after the onset of symptoms in all cases, both mild and serious, is between five and ten years, somewhat nearer the former than the latter. A few individuals can live for as long as fifteen, twenty, or even twenty-five years after the first attack.[19]

Treatment.—The drug most successfully used in acute attacks is morphine hypodermically in one-quarter grain doses until relief is obtained. Where this is not convenient, the patient may carry "pearls" of amyl nitrite which are crushed in a handkerchief and inhaled until the pain is relieved or the head throbs. One-one-hundredth grain (1/100 gr.) tablets of nitroglycerin may be placed under the tongue for rapid

absorption and are rather convenient. A drink of whiskey or brandy sometimes stops an attack.

Osteopathic treatment consisting of gentle but firm pressure to the upper thoracic and cervical regions (quite commonly spoken of as inhibitory treatment) is quite efficient. In applying the pressure constantly, shift slowly from one spinal segment to another with very careful and gentle releasing of pressure and then reapplying it.

The best service is rendered between attacks. Daily osteopathic manipulative treatment is essential. Gently relaxing the neck and upper thoracic spine, raising the ribs, with soft tissue work over the abdomen, and correcting such lesions as are found gives good results.[20] The diet must be simple, and overeating avoided. The patient should avoid physical effort and also emotional stresses, fits of anger, etc. Tobacco should be used moderately, if at all.

Surgery consisting of cervical and thoracic sympathectomies in various ways has drawn recent interest, but as yet little can be said of definite permanent results. Indeed, these methods only relieve the symptoms and if there is anatomical disease it persists or is accentuated by removal of the protective symptom of pain.[21]

In conclusion, the osteopathic physician has far more to offer his anginal patients than his allopathic competitor, in that he is more nearly able to treat the cause of the pathology and not just the symptoms. The remarkable results often obtained osteopathically would seem to substantiate these claims.

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Symposium on The Plastic Basicranium*

III. Lesionability of the Basicranium

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We are concerned in this paper with the lesionability of the articulations in the basicranium. The writers of the two earlier papers [1] [2] have described the plastic basicranium and the intracranium as it relates to the plastic base. In those two papers certain portions of Dr. Weaver's thesis were presented to you. Those parts of that presentation from which I shall carry forward are as follows:

(1) The head bones constitute three, three only, but three complete vertebrae;

(2) Certain definite morphological portions of these three cranial vertebrae form the cranial base;

(3) At birth and for definitely statable periods during infancy, childhood, youth, and young adulthood these morphological elements remain interrelatedly movable;

(4) Idiopathically the normal ossification which gradually should take place in these articulations fails to do so, in which case the base remains plastic just so long as ossification fails to occur;

(5) This plasticity of the base results in true intrabasilar articulations which normally continue as such for definitely statable periods.

It is the purpose of this paper to prove that these intrabasilar articulations are lesionable.

In all of her work Dr. Weaver talks of movable articulations. She does not talk of ossified joints. Her insistence is upon the fact that in the plastic cranial base there exist true movable articulations of true morphological parts of true axial vertebrae.

In order to show lesionability in these articulations, let us consider the types of articulations which exist in the plastic base, and the possibilities of movement which they may enjoy. The following is the classification of joints as given by Thomas R. Dwight. [3]

> A joint or articulation implies the union of two or more bones. Joints may be divided, according to their mobility, into three great classes: the fixed joint (synarthrosis), the half joint (amphiarthrosis), and the true joint (diarthrosis).
>
> Fixed Joints: These allow no motion in the mature condition . . .

I will arrange a table of his classification:

(A) Fixed Joints:
  1. Suture
  2. Synchondrosis

(B) Half Joints:
  1. Symphysis
  2. Syndesmosis

(C) True Joints:
  1. Arthrodia
  2. Enarthrosis
  3. Condylarthrosis (Articulatio ellipsoidea)
  4. Saddle-Joint (Articulatio sellaris)
  5. Ginglymus
  6. Trochoides

If we limit our concept of articulations to Dwight's, or to any, anatomic classification, we find some difficulty in acquiring an understanding of the plastic base; but if to this anatomical understanding we add a knowledge of joints which is based upon

*This symposium constituted the morning program of the 1937 Annual Postgraduate All-Day Meeting of Dr. Charlotte Weaver's Postgraduate Clinic for the Study of Nervous and Mental Diseases, held September 15, 1937, Akron, Ohio.

their morphology, the process of arrival at that understanding is accelerated, made easy.

Perhaps as illuminating an article on joints as can be found was written by Dr. Frank Baker[4] and published in 1913. At the time Dr. Baker was Professor of Anatomy at Georgetown University and School of Medicine, and Superintendent of National Zoological Park, Smithsonian Institution, Washington, D. C. The following "Table of Joints" is taken from this article.

TABLE OF JOINTS

Order I—Primitive joints, or amphiarthroses
- Class 1—Without a synovial cavity
  - Intervertebral—of bodies
  - Lumbosacral
  - Sacrococcygeal
  - Sternal
- Class 2—With an imperfect synovial cavity
  - Sacroiliac
  - Interpubic (symphysis pubis)

Order II—Immovable joints, or synarthroses
- Class 1—Sutures
  - Joints between the bones of the skull, except occipitosphenoid and ethmovomerine
- Class 2—Synchondroses
  - Occipitosphenoid
  - Ethmoverine
  - Chondosternal of first rib
  - Costochondral

Order III—Movable joints, or diarthroses
- Class 1—Planiform joints, or diarthroses
  - Intervertebral, of articular processes
  - Lumbosacral, of articular processes
  - Costovertebral (costocentral)
  - Costovertebral (costotransverse)
  - Chondosternal, second to seventh ribs
  - Interchondral, sixth to ninth costal cartilages
  - Sternoclavicular
  - Acromioclavicular
  - Radioulnar, distal
  - Carpal, between single bones
  - Carpometacarpal, except thumb
  - Intermetacarpal
  - Patellofemoral
  - Tibiofibular
  - Tarsal, except talonavicular and calcaneocuboid
  - Tarsometatarsal
  - Intermetatarsal
- Class 2—Pivot joints, or trochoides
  - Atlantoepistrophic
  - Radioulnar, proximal
- Class 3—Hinge joints, or ginglymi
  - Elbow joint (humeroulnar)
  - Phalangeal of hand
  - Knee joint (femorotibial)
  - Ankle joint (talocruraltibia and fibula with astragalus
  - Phalangeal of foot
- Class 4—Saddle joints
  - Carpometacarpal of thumb
  - Calcaneocuboid of foot
- Class 5—Pommel joints (condyloid)
  - Temperomaxillary (mandibular)
  - Atlantooccipital
  - Radiocarpal
  - Intercarpal (os magnum with semilunar and scaphoid)
- Class 6—Ball-and-socket joints (enarthrodia)
  - Shoulder joint (scapulohumeral)
  - Metacarpophalangeal
  - Hip joint (coxal-coxofemoral)
  - Tarsal (talonavicular)
  - Metatarsophalangeal.

Even in this classification the references to the joints of the skull are to those of the fully mature adult skull. Our reference is to the skull of the prenatal babe, the infant, the child, the youth, the young adult, and to the idiopathic adult skull in which the basilar articulations have failed to achieve their mature condition and are, therefore, movable.

A joint is a junction of two or more osseous structures. Joints pass through stages of growth. Originally all joints are movable because the junction of the osseous parts is achieved by means of the preosseous matrix. Joints may remain movable; may become more fully movable; or may become immovable, fixed. Dr. Baker says further:

> In all joints there is originally sufficient intersegmental tissue to permit slight and limited motion. . . . In the course of development the osseous or cartilaginous tissue of the segments usually tends to encroach more and more upon the intersegmental structure. If no alteration occurs in this, the joint becomes less and less movable until complete fixation ensues . . . When the connecting substance is fibrous, the joint is called a suture; when cartilaginous, a synchondrosis. Strictly speaking the union of the shaft of a long bone with its epiphysis is a synchondrosis. There being no strain caused by movement in this class of joints, the periosteum passes over the intersegmental tissue without thickening into ligamentous structures. Sutures are found only between bones that are developed in membrane like those of the face and the vault of the skull. They form a special class of articulation, their function being not so much to permit movement of the parts united as to separate those parts and thus allow for the expansion of the enclosed structures.

Baker here states clearly the difference between sutures and all other joints; he, also, definitely allocates sutures to the vault and face. Also attention is called to two statements: first that all joints are at first movable; second, if no alteration occurs in their original state, they become less and less movable until complete fixation ensues.

In the human basilar articulations during the period between their original movable state as primitive joints and their fully mature adult state as fixed joints they remain movable. It is in this very state, in which movability progressively approaches a state of immovability with spicule formation which even in the unimpaired joint is progressive, that the high ratio of lesioning with fixation occurs. Unlike the joint in which the fixation of the lesion is dependent upon the surrounding soft tissues, fixation of the lesion of the intrabasilar articulation inheres in the nature of the joint itself. So strong is the tendency to spicule formation that in her files Dr. Weaver has x-rays of lesioned bases in which the history is incontrovertably birth-lesioning and in which the lesioned state is clearly evidenced and in which is to be seen complete ossification of the base at so early an age as six with such thickening of the base as to classify as hyperostosis and in which all other bones of the skull and face present a normal state of ossification.

To return to Dr. Baker[4], I wish to direct attention to his classification of the lumbosacral and the sacrococcygeal joints as of order I, "primitive joints or amphiarthroses," and as of class 1 of this order, "without synovial cavity"; and to his classification of the sacroiliacs and the interpubic joints as of order I, "primitive joints or amphiarthroses," and as of class 2 of that order, "with imperfect synovial cavity"; also to the fact that the articulations between the vertebral bodies are classified as of order I, class 2, i. e., primitive joints with no synovial cavity. The

intervertebral joints of the articular processes he classifies as of order III, class 1, namely, movable joints, or diarthroses, which are planiform, or arthrodial; the atlantooccipital as of order III, class 5, namely, movable joints, or diarthroses which are pommel, or condyloid. Lumbosacral articular processes are order III, class 1. Costocentral and costotransverse articulations are of order III, class 1.

Hence, as to axial articulations, we have:

(1) All intercentral articulations, order I, class 1, primitive, movable, no synovial cavity.

(2) All intervertebral of the articular processes, except atlantooccipital, order III, class 1, movable joints or diarthroses, planiform.

(3) Atlantooccipital, order III, class 5, diarthoses, condyloid.

(4) All ribs, costocentral and costotransverse, order III, class 1, diarthroses, arthrodial.

Dr. Baker[4] classifies the occipitosphenoid as of the order II, class 2, immovable joint, or synarthrosis, synchondrosis. Dr. Weaver makes the point that in its final, fully mature, ossified state it is this, but that in its preossified state it is of the first order and of the first class of that order, that is, a primitive joint, movable, a diarthrosis with no synovial cavity, and that, in this latter it holds true in type with all homologous spinal intercentral articulations. She points out that this holds true, also, of the articulation between the centra of the first and second cranial vertebrae.

As to the other basilar articulations, Keith[5] says:

> The petromastoid forms part of the base of the skull . . . the petrous bone is primarily developed as an independent cartilaginous capsule . . . at an early date . . . it fuses at certain points with the parachordal basis of the occipital.

There is a primary similarity of development of the preosseous cartilaginous spinal ribs. It is to be noted that Keith does not state that the petromastoid *bone* fuses with the occipital *bone*, but that the preosseous matrix of the petromastoid fuses with the preosseous matrix of the occipital. Keith continues:

> Even as late as the 30th year remnants of the . . . cartilage may be found between the . . . jugular process of the occipital and the mastoid.

The jugular process of the occipital is the costotransverse process of the third cranial and articulates with the respective articular surface of the third cranial rib. The petrous portion of the temporopetromastoid is the head and neck of the third cranial rib. Here is a true articulation of a rib with the costal element of the transverse process of a true vertebra, which articulation is movable within certain limits, as are its spinal homologues.

Keith[5] further refers to "The fibrocartilage in the foramen lacerum . . . " The foramen lacerum has been identified in this symposium as the intervertebral foramen which exists between the second and third cranial vertebrae. It is classic osteopathic acceptance that the osseous parts contributing to the formation of any spinal intervertebral foramen are interrelatedly movable. This same motility holds true of the bones forming the lacerated foramen. Compare Plates V and I. Plate V is an x-ray study of the intervertebral foramina, left and right, which exist between the first and second cervical vertebrae. In Piersol's "Human Anatomy"[6] is to be seen a very fine illustration of the intervertebral foramina of the dorsal region of the spine. In the cervical region (See our Plate V) the rib homologue is removed from the axis so that it takes no part in the contours of the foramen. In the dorsal region of the spinal axis the rib plays an important part in the rounding out of the foramen. In the cranial region of the central bony axis (See our Plate I) the rib homologue (petrous portion of the temporal bone) plays an important part in the formation of the intervertebral foramen (foramen lacerum).

Between the centrum of the third cranial vertebra (basiocciput) and the pedicle of its neural arch (exoccipital) there is to be seen (and *very* visibly in the accompanying x-ray of the skull which is marked Plate I) the articulation which exists there. This skull is a normal skull and is between three and five years of age. (The long, oblong shadow which shows on the right side of the skull is the parietal window which Tramond, of Paris, France, cut in the skull under the direction of Dr. Weaver so that she could use the skull in the series of seven which Tramond prepared for her to demonstrate the intracranial base in situ from its prenatal to its fully mature adult state.) The spinal homologue of this basilar articulation, the pediclecentrumarticulation, is the neurocentral suture of the spinal vertebrae. Here, in the base, it is a true, primitive, and, therefore, movable, articulation.

Less markedly pronounced, in fact somewhat vaguely visible, but nevertheless equally identifiable, in this same Plate are to be seen the articulations formed by the laminae and the pedicles of the third cranial vertebra. In describing the articulation which exists between the centrum of the second cranial vertebra and that of the third, showing its motion and its lesionability, I will quote from one of the unpublished articles of Dr. Charlotte Weaver, which we have studied in the Tuesday morning sessions of her Postgraduate Clinic for the Study of Nervous and Mental Diseases. In it, speaking of the cranial vertebrae, she says:

> Between centrum 2 and centrum 3, known otherwise as the basisphenoid and the basiocciput, a true, unmodified intervertebral disc exists at birth. Later, as the joint modifies the disc becomes somewhat flattened. It remains throughout life as a demonstrable structure, although, as the joint continues to change and becomes a modified synchondrosis, and, then, by means of osseous penetration, a modified suture, trabeculae of bone are found to be traversing the progressively modifying disc.
>
> The articulation as it exists at birth is a true axial intercentral articulation. All of the spinal intercentral articulations are hampered in the scope of their motility by the typical local modifications of their various morphological parts, which modifications, although they each individually, or, several collectively, *do* admittedly strengthen, and also, insure the continuity of the integrity of, the intercentral articulations in specific, definitely circumscribed motions (specific for each of the several physiological regions of the spinal vertebral axis) yet do, also, definitely, limit the gamut of motility of an otherwise unhampered intercentral articulation. These same findings hold true of the intercentral articulations of the cranial series of vertebrae.
>
> Such an hampered articulation, then, as we have described in its spinal homologues, is that one which exists at the onset of parturition between the second cranial and the third cranial vertebral centra. As such it persists through definitely statable periods during infancy, childhood, youth, and young adulthood. It permits of approximation of, and of separation of, the apposed surfaces of

Plate I.—X-ray of normal skull, three to five years, taken from above down, to show intracranial view of intrabasilar articulations. Skull preparation by Tramond of Paris, France. X-ray by Dr. Edwin C. White, Warren, Ohio. Both under the direction of Dr. Charlotte Weaver.

the two centra; approximation or separation, in parallel planes, or in any of the possibilities of approximation or separation of unparallel planes. The amount of torsion of which it is capable is limited by the interarticular relationships of the various vertebral parts and by the extent of the elasticity of the intervertebral disc. Torsion in excess of such elasticity is not here at birth and for statable periods after birth too well insured against. A fair extent of torsion can be secured. When this is carried beyond the elastic limit of the intervertebral disc tissues, either they rupture or the disc separates in the area of greatest tension from either the one or the other of the two cranial centra involved, or from both; and an acute lesioning of the articulation occurs, which may become a chronic lesion, or the seat of chronic lesioning. The same discussion, with modifications, applies to overseparation with, and without, torsion, and to approximation with, and without torsion.

The articulation which exists between centrum 1 and centrum 2, known otherwise as the dorsum sellae and the basisphenoid, is, also, a true intercentral articulation at birth and for definitely statable periods thereafter. It, too, has its intervertebral disc, a very attenuated disc, to be sure, but nevertheless it is there, and it is demonstrable. It shows very clearly in the x-ray studies as well as in the special dissections of the skull. The movements in this articulation are of the same type as those of the articulation between centrum two and centrum three, with the addition of more separation due to the freedom of the upper surface of centrum one.

Such complete description of the other intrabasilar articulations are to be found among the other original papers of Dr. Weaver's files.

Another articulation of the basicranium is not intrabasilar but basilarcervical. It is the articulation

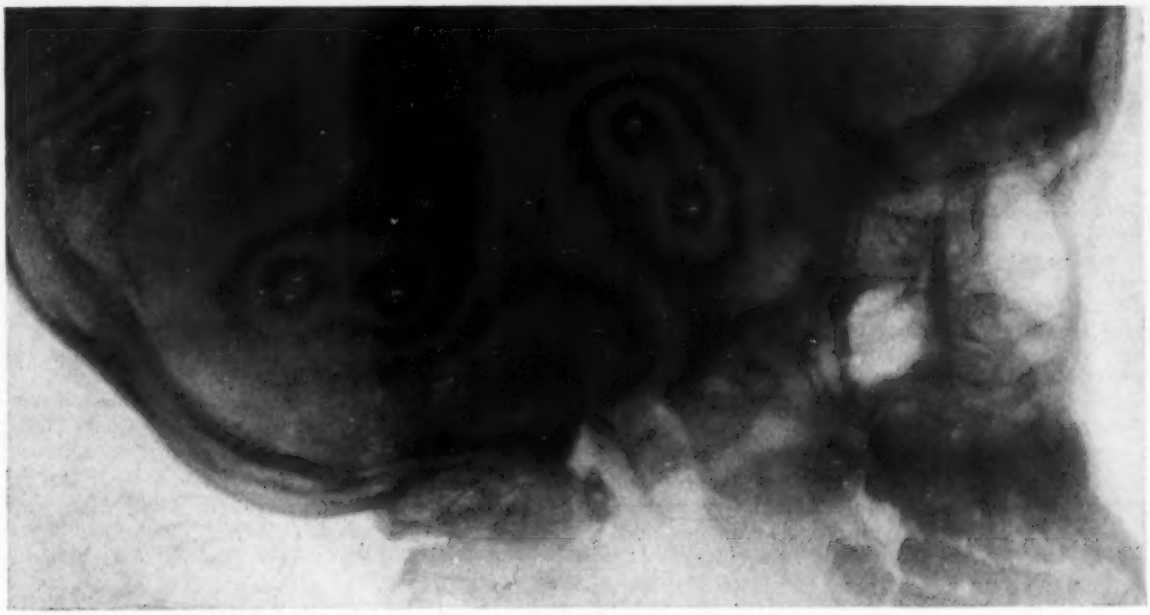

Plate II.—X-ray portion of head to show intercentral articulation which exists between centra of second and third cranial vertebrae. Not very visible. Could be questioned.

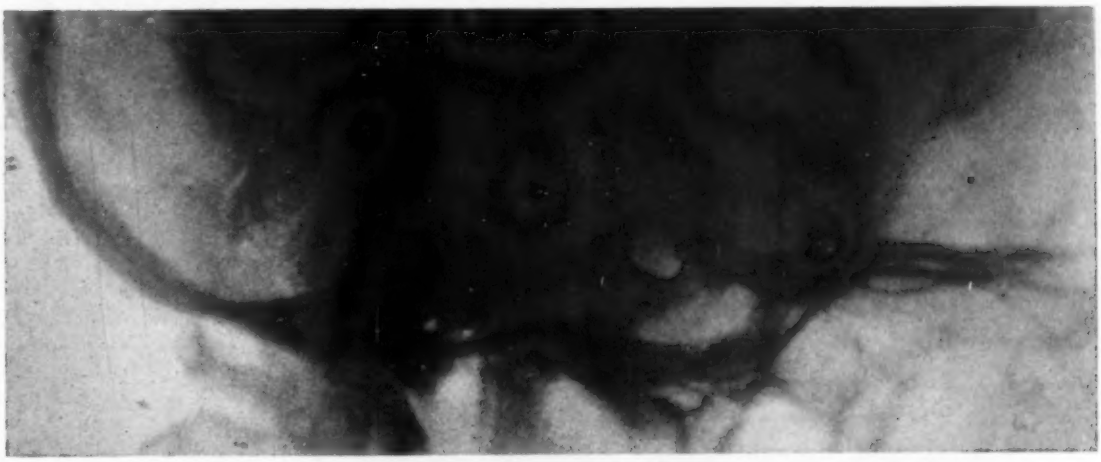

Plate III.—X-ray portion of head to show intercentral articulation which exists between centra of second and third cranial vertebrae. Unquestionably visible. In lesion, and fixed. Adhesions, probably of bony spicule formation, at superior border.

which exists between the articular condyle of the third cranial and the superior articular facet of the first spinal, known as the occipitoatlantal articulation. This does not need description as it is well understood osteopathically. It should not, however, be termed a "cervical" articulation. Dr. Weaver points out that it is not a cervical, but a basilarcervical, articulation.

In conclusion: Having seen that the bones of the head are developed as true, though cranial, vertebrae; and having established the fact of the existence of true intervertebral and intravertebral articulations of the basicranium; and, noting that up to definitely statable ages these articulations are normally unossified, and that in this unossified state they form true articulations of order I of the "Table of Joints" as prepared by Dr. Baker[4], herein quoted, and of class 2 of that order, then we, as osteopathic physicians, with our knowledge of axial articulations and of their lesionability, should be prepared to expect that certain definite stresses and strains should cause these basilar articulations to be come subluxated. X-ray and clinical findings together with the results of the reduction of the lesions prove this to be true. The manner in which this may happen is to be discussed in two of the following papers of this symposium.

Special technique is required for the making of these x-ray studies. It will be noticed in the two x-ray films (Plates II and III) of a case studied in the clinic, that although these are taken of the same individual, on the same day, and at the same visit to the

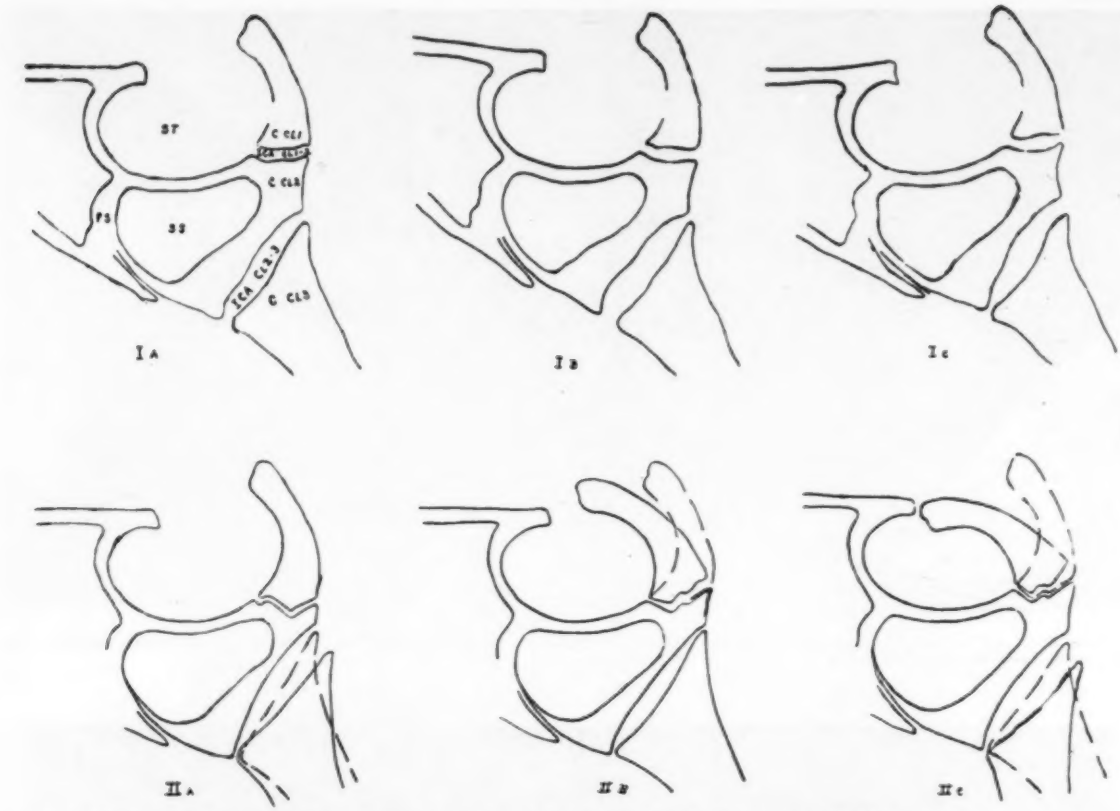

Plate IV.—Drawings made from x-ray films, showing normal and abnormal cranial articulations. For full explanation of drawings, see the text on p. 189. Original drawings by Dr. Charlotte Weaver. Technical art work by Dr. R. W. Sanborn, Akron, Ohio. Photographed by Bork.

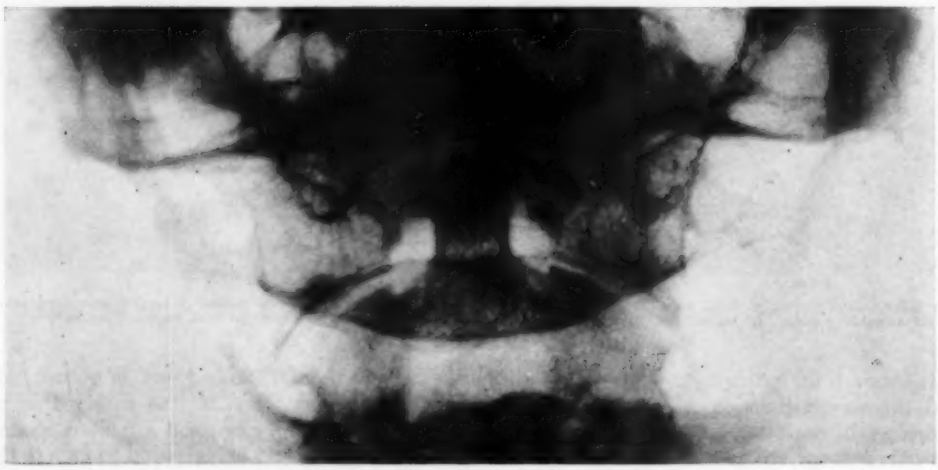

Plate V.—X-ray of occiput, first and second cervical vertebrae, to compare with Plate I for comparative study of foramen lacerum as seen in Plate I and intervertebral foramen as seen in Plate V. For further details, see the text.

x-ray laboratory, yet in Plate II, the first taken, the articulation between centrum 2 and centrum 3 is not especially visible, but that in the other, Plate III, taken immediately after, the articulation shows up plainly and definitely. This is brought about by positioning of the head on the table at the exposure time, and is the reason why just any picture of the side of the head will not do as a determining study in these cases. (The serrated notch in the frontal contour is an artifact.) In our second annual symposium planned to be given here next year at this time, we hope to have one paper devoted exclusively to the technic of x-ray study of the plastic base.

In the Tuesday morning sessions we have studied the plastic base in three positions, "straight," "extended," and "flexed." This is Dr. Weaver's invariable

method of studying the articulation which exists between the centrum of the second cranial vertebra and that of the third. I would call your attention to the accompanying drawings, Plate IV, which have been made by Dr. Weaver from x-ray films in her files. They convey not the artist's *idea* of the conditions but the actual conditions as taken directly from the films. They are diagrammatic, but true to the respective x-ray films from which they are made.

Plate IV, Fig. I A shows a normal base in which ICA C1 1-2 represents the intercentral articulation between the first and the second cranial vertebrae. ICA C1 2-3 represents the intercentral articulation between the second and third cranial vertebrae. C C1 1, centrum of first cranial vertebra (dorsum sellae). C C1 2, centrum of second cranial vertebra (basisphenoid). C C1 3, centrum of third cranial vertebra (basiocciput). PS, presphenoid. SS, sphenoidal sinus. ST, sella turcica.

Fig. I A shows normal ICA C1 2-3 in position "straight." Fig. I B shows this same articulation in position "flexion." Fig. I C shows it in "extension" position. ICA C1 2-3 normal in all three positions.

Fig. II A shows lesioning of ICA C1 2-3. The articulation is in hyperflexion and is fixed in that position. It was found not to change through the series of three positions in which it was studied, but to remain in the position as depicted.

Fig. II B shows a lesioning of ICA C1 1-2 in which the centrum of C1 1 tips forward over the sella turcica. This position was found to be retained throughout the series of studies.

Fig. II C shows gross lesioning of ICA C1 1-2, and gross lesioning of ICA C1 2-3.

The x-ray studies, Plates II and III, were chosen to be shown here because the articulation between the centra of the second and third cranial vertebrae is in lesion. It is fixed. There are adhesions which are evidently of fine bony spicular type, along the superior margin. They do not invade the articulation. These adhesions were broken down by Dr. Weaver in the clinic, the articulation normalized, the alignment corrected by means of her highly specialized osteopathic operative procedure, comparable in the degree of its specialization and in the nice exactness of its technique with any possible refinement of brain surgery.

I have gone a little beyond the lesionability of the plastic basicranium. I have given a glimpse into that field of high osteopathic specialization which, reducing lesions of the plastic base, permits that plastic base to grow and to expand normally throughout the years of its normal expectancy of plasticity so that as the period of its ossification approaches the cranial base ossifies around intracranial contents which have not been damaged by the continuous existence of basilar lesions, but which have been permitted to develop normally through the normal time limit of the plasticity of the cranial base.

What the insurance of normal plasticity during the normal plasticity period may mean to the future mental and physical life of the individual it remains for Dr. Weaver, herself, to discuss before you at some future date as she has discussed it before us who have accepted the privilege of the Tuesday morning sessions of her Postgraduate Clinic for the Study of Nervous and Mental Diseases.

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532 N. Park Ave.

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CINCINNATI—THE 1938 CONVENTION CITY

Never to have visited Cincinnati is never to have seen one of the most interesting of the older cities of the Middle West. Named "The Queen City" back in the days when river travel was at its height, it has about it something of the air of the south mingled with the bustle and industry of the north. It has that indefinable thing which in a city is called "atmosphere," and in an individual "personality." It has the air of certain foreign cities that are built on different levels. It looks down on the winding Ohio and across to the green hills of Kentucky.

Cincinnati's summer attractions are many and varied. A trip down the river on *The Island Queen* on a warm summer night to Coney Island is an unique experience. It is one of the traditions of Cincinnati. A visit to the famous Zoological Gardens by day to see the animals, and in the evening to hear famous singers in grand opera amid ideal surroundings, and to dance afterwards on the wide club-house veranda is a delightful way to spend a summer evening.

Cincinnati is interesting because of its city manager form of government which has served as a model for other municipalities. It has a famous university and art museum. Its parks are high on the hills where beautiful views of the surrounding country may be had; its system of boulevards is second to none. Cincinnatians are hospitable, and the osteopathic profession of the city is planning to make your visit memorable.

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A NEW YEAR'S RESOLUTION

One year ago it was suggested in these columns that every reader make a New Year's resolution—not a negative resolution to stop this thing and abstain from the other, but a positive resolution to budget our time and finances so as to insure our attendance at two (at least) osteopathic conventions in 1937—that of our divisional society and that of the A.O.A.

Speaking of New Year's resolutions and budgets, reminds us of the nerve-racking hours put in each year, estimating with careful precision just how many dollars will come into the A.O.A. treasury and how it must be spent to accomplish a maximum of work for the good of the profession.

Pages of figures are tabulated showing what each item is expected to bring in and what each should cost. Probably not one member in 500 analyzes the annual report to see how accurately these estimates have been made. A very few items are listed below from each of the last two fiscal years, the first column showing the estimate made of income or expense and the other column showing the *actual* amounts received or expended.

1935-36

	ESTIMATED	ACTUAL
INCOME		
Forum Advertising Income	$ 2,500.00	$ 2,406.11
Osteopathic Health Sales	11,000.00	11,592.75
Convention Exhibit Income	11,000.00	10,642.00
EXPENSE		
Cost of Forum	6,000.00	5,643.15
Cost of Osteopathic Health	9,000.00	9,507.87

1936-37

INCOME		
Osteopathic Magazine Advertising	$ 2,500.00	$ 2,703.25
Osteopathic Health Sales	12,000.00	11,451.67
Convention Exhibit Income	13,250.00	13,535.95
EXPENSE		
Cost of Osteopathic Magazine	20,000.00	20,623.75
Cost of Directory (1937 issue)	2,900.00	3,038.94

Observant experience over long years has enabled our employed officers to make these close estimates on the basis of past accomplishment. But we are now entering a new calendar year. A few fleeting months will usher in a new fiscal year with a vitally important unknown quantity—membership income. The House of Delegates at the Chicago convention voted overwhelmingly to adjust the dues to meet the demands of the increased services which have been undertaken at their direction. If our officers can hear from our members, pledging their continued support, a budget can be made within reason. Otherwise it must be done in the dark.

Elsewhere in these columns will be found a new Honor Roll. It contains the names of the pioneers who, up to about the middle of December, had made full payment of their dues at the adjusted rate for the fiscal year 1938-39. There are many who can pay this fee now just as easily as they can in May. Its payment now helps to stabilize the machine and make lighter the heavy tasks at the Central office. There are hundreds of others who can fairly easily deposit $10 now as an earnest of their resolve to pay the balance by the beginning of the fiscal year. There are others who will celebrate the New Year by beginning systematically to put away each week, or each month, a sum which, by June 1, will cover the dues. Beginning now one dollar put away at the beginning of each week, or $4.00 the beginning of each month for five months will take care of A.O.A. dues. If there are divisional society dues also to be paid within that time, an additional sum must be put aside for that.

New Year's resolutions and budgets go hand in hand. This one dollar a week is a temporary arrangement for many simply to get ourselves adjusted before the beginning of the next fiscal year. With the habit established, and an earlier start made next year, the weekly or monthly saving will not necessarily be so high. But the plan is commended to all with the idea that in most cases it will take care of A.O.A. dues, divisional society dues, and contributions for the Committee on Public and Professional Welfare, or other important causes.

THE SURGICAL SUPPLEMENT

"A real advance is instituted with this number of THE JOURNAL—an advance which it is hoped will make itself increasingly evident with the passage of the months."

Those words opened an editorial in this JOURNAL, eleven months ago, telling of the work planned by the Editorial Advisory Committee of the American College of Osteopathic Surgeons, which was to assist in securing and editing the best type of osteopathic surgical articles, in providing good editorials from the viewpoint of the osteopathic surgeon, and in abstracting the best of surgical articles from current literature.

So well pleased were the surgeons with the work of this committee that at their Kirksville convention in October, it was decided to continue it and to go further. Therefore, a committee was created under the chairmanship of Dr. Harry L. Collins to provide a sixteen-page supplement for THE JOURNAL four times during the coming year.

The object of this supplement is not to draw the surgeons away from the rest of the profession. It is not to be a specialist publication. It is not to be something of interest merely to a handful of osteopathic physicians.

The object of the surgical supplement is to integrate the general practitioner and the surgical specialist. It is to encourage them to speak each other's language. It is to stimulate cooperation. It is to encourage each group to consult and cooperate with the other, that general practitioners may more accurately diagnose surgical conditions and better prepare them for surgical care, and that the surgeons may give the best in the way of their services and return such patients with a heightened appreciation of the value of osteopathy.

THERE OUGHT TO BE A LAW

"The fact that the system has failed us and is failing us justifies demand for a strong federal pure food and drug law which would place the study and evaluation of such products as prescription drugs and their ingredients in the hands of impartial government officials who should be given the same power of censorship they now have over patent medicines."

The above quotation is from an editorial in THE JOURNAL for November, 1937, headed "The Sulfanilamide Fiasco." On December 1 Senator Copeland introduced a bill for an act "to safeguard the public health against the distribution of drugs which have not become generally recognized as safe for use." It provides that "no person shall introduce or deliver for introduction into interstate commerce any drug composed, in whole or in part, of any substance or combination of substances, . . . not generally recognized as safe for use in the dosage and with the frequency and duration prescribed, recommended, or suggested in the labeling thereof, unless the packer of such a drug holds a notice of a finding by the Secretary that such drug is not unsafe for use."

Although "the Secretary" is referred to repeatedly in the bill it nowhere specifies what secretary is intended. Because it refers to interstate commerce and is referred to the Committee on Commerce, it might seem likely that the Secretary of Commerce is the one the senator has in mind, except that there is a reference to "the Food and Drug Administration of the Department," which makes it appear that the Secretary of Agriculture is meant. The bill provides further: "To aid and advise him in making such finding the Secretary is hereby authorized to create a board consisting of one representative from each of the following organizations: The Public Health Service of the United States Treasury Department, the American Institute of Homeopathy, the American Medical Association, the United States Pharmacopoeial Convention, the American Pharmaceutical Association, and the Food and Drug Administration of the Department."

The Secretary of Agriculture lately submitted a report to Congress in response to resolutions by the House and Senate showing that at least 73 persons died as the result of taking the drug known as "elixir sulfanilamide" and that 20 other persons who took the "elixir" died, though it had not yet been established that this drug was exclusively responsible. The report showed that of the 240 gallons of the "elixir" manufactured, eleven gallons and six pints had been dispensed on prescriptions or sold over the counter, of which amount about one-half was consumed. The Secretary of Agriculture reports: "Most of the drug was administered on physicians' prescriptions." He made a series of recommendations for legislation, most of which seem to be embodied in the Copeland bill.

In connection with this whole sulfanilamide matter one is reminded strongly of the pot which called the kettle black. Most of the "elixir" which was used was prescribed by physicians. Dr. Fishbein, mouthpiece of the American Medical Association, went out of his way to protect those physicians who used it.

So-called "regular" medicine so often goes out of its way to urge a coroner to ruin an osteopathic physician if a patient dies under his ministrations. They would have their clientele and lawmakers too, believe that the chief occupation of osteopathic physicians is in breaking ribs, smashing tuberculous hips, manipulating cancer—taking as evidence rumors of isolated cases, few if any of which have any authenticated background—false statements leading to unjustified criticism. The question arises whether it is any worse to break a rib (if, indeed, such things have been done) in the course of treatment than it is intentionally and deliberately to administer by mouth a treatment whose possible effects are unknown but which may well kill. Everybody at all acquainted with the practice of medicine knows that this kind of thing goes on all the time in the way of overdoses of "accepted" remedies. Everybody knows also that death as a result of taking drugs is an unfortunate, but not a rare, occurrence. It could not be otherwise with drugs as unstable as they are, and with people possessed of so many idiosyncrasies. Both patients and drugs are unstandardized, and the resulting combinations are unpredictable. Perhaps not all experimentation on patients is to be utterly condemned. At least a tremendous amount of it goes on, and it is unnecessary to cite instances.

We hold no brief for the ignorant or careless osteopathic physician, but we do know that in the course of treatment of sick people occasional bad results are inevitable. The osteopathic physician is so constantly in the public eye, and is subjected to such pitiless criticism no matter what he does, that he is, of all physicians, most likely to act with extreme caution in his every therapeutic endeavor, the tendency being not to treat at all if harm might possibly come, rather than to risk a dangerous reaction. There is an old medical precept to the effect that if you cannot do any good you should at least do no harm.

But we wander afield. There ought to be a law. We look with suspicion upon the assumption by a government body of authority over physicians and the type of treatment which they shall prescribe. We wonder whether proper machinery could be set up, or indeed, whether it will be, for making the intricate judgments in such cases. But we charge definitely that the only standards which now receive any sort of acceptance, those of the United States Pharmacopeia, and of the Council on Pharmacy and Chemistry of the American Medical Association have failed absolutely of authority to control, and, in many instances, of actual dependability for accuracy. We think it likely that government authority, either in the Department of Commerce or the Department of Agriculture could not possibly be less dependable, and might well indeed be more definitely authoritative.

It has been freely predicted in the past that the American Medical Association was riding for a fall from its high horse of authority, not so much because of the actual lack of scientific knowledge upon the part of the hardworking individual members of its Council on Pharmacy and Chemistry, but more particularly because of the politico-commercial auspices under which the Council works and under which its findings are promulgated. We could not be sure that a government council in control of the distribution and standardization of drugs would be either omniscient or utterly unbiased in its judgment, "pressure groups" being what they are in Washington today, but we could be fairly certain that under such rule no particular school of medicine could selfishly profit. It might even be possible that "the forgotten man," the drug-consuming public, would get a break and that sooner or later we could expect something really efficacious to be accomplished in the way of control of drugstore prescription and indiscriminate self-drugging.

There ought to be a law.

R. C. Mc AND R. G. H.

IS IT YOUR STATE NOW—OR NEXT?

What protection do the laws give to patients of osteopathic physicians? What rights or privileges do they guarantee to the doctors themselves? Who, among the officers supposed to be public servants, is bound to respect such rights as the legislators have given us?

A midwestern state where surgical practice rights of osteopathic physicians are in dispute recently enacted a law requiring health certificates of men and women applying for marriage licenses. Soon afterward an officer in the department of public health said in a public address: "Taking blood for a Wassermann or Kahn test, however, is generally regarded as a surgical procedure. Osteopaths are not legally qualified to do surgery." Osteopathic physicians in that state are still making the health certificates, in keeping with an opinion by the attorney general. But who knows how soon the department of public health will find a way around that?

The state official quoted doubtless knows, as every osteopathic physician knows, that the taking of blood samples, whether it be a drop for examination under the microscope, or whether it be sufficient for a more complicated test, is a routine laboratory procedure performed by uncounted technicians every day. The statement that it is surgery is absurd.

The M.D.'s and their tools among the enforcement officers would stand a far better chance (if they wanted to do it) of convicting all the pharmacists in the country on charges of practicing medicine without a license, because every day they prescribe and administer drugs—powerful and dangerous drugs—than of making this ridiculous statement stick.

Does the absurdity of the remark make it any less dangerous? It does not. In an eastern state where doctors of osteopathy for thirty years have been regulated by law which recognizes them as physicians, a D.O. was recently haled into court on a speeding charge. His defense was that he was on the way to a patient. The judge asked whether he was an M.D. and when he replied that he was a doctor of osteopathy the judge refused to permit him to say another word in his defense and fined him. His state law did not protect him, and the ignorance of the judge was no defense.

The office of the attorney general in a western state recently advised the state department of health not to accept samples of blood taken by osteopathic physicians from persons suspected of having venereal diseases, although the law in that state for years has specifically said:

> All duly licensed osteopathic physicians practicing in the state . . . . shall observe and be subject to all state and municipal regulations relating to the control of contagious and infectious diseases, signing of birth and death certificates and signing certificates pertaining to public health, and shall report to the proper health officer the same as other licensed physicians. Any such certificate signed by a doctor of osteopathy duly licensed to practice as such under the laws of this state shall be of the same force and effect as those signed by other licensed practitioners. All state and municipal officers shall recognize all licensed osteopathic physicians the same as other licensed practitioners.

These things are happening constantly. A number of other instances were reported last month in the article entitled, "It Can Happen Here." All of them prove that it is not sufficient to have an adequate practice act. Public officials must be informed and popular understanding must be developed.

Practice acts in the coming years are likely to give us much less difficulty than social security legislation. The best of practice acts are not adequate to give protection in the latter field. In an eastern state where the law for many years has given doctors of osteopathy full recognition as the peers of any physicians in the state, it is reported that in more than one county the welfare committees are meeting simply with representatives of county medical societies to formulate their rules, and are ac-

cording no recognition to organized osteopathy, or to individual osteopathic physicians. There seems to be evidence of discrimination throughout that state.

These things can be changed if we want to change them. The task is not one for children, nor for the faint-hearted. It calls for the close cooperation of all osteopathic physicians. It demands that each of us study the situation and that we assume our responsibilities in the great osteopathic organization which includes every local, county, district, divisional (state or provincial) society, and the American Osteopathic Association. It is necessary for every officer and committee member to put his best efforts into the task assigned him.

Although such service is vitally necessary, it can succeed only as it is adequately financed. Securing justice on all fronts is only one aspect of the task facing us, but it provides a good example of the things the House of Delegates had in mind when that body decided, by an overwhelming vote, to change the rate of dues payment beginning next June 1.

In order that public health officers, attorneys general, judges and other public servants may be informed properly, then, each of us must do two things: work and pay. The payments, in turn, are divided into two parts: dues in local, divisional and national organizations, and contributions to such efforts as the various college endowment campaigns, and that of the Committee on Public and Professional Welfare, which is working effectively to bring about such a state of affairs that there will be adequate laws and regulations, and that these will be interpreted and enforced as their makers intended.

A REAL ENDOWMENT CAMPAIGN

There are about eighty-five qualified osteopathic physicians in Great Britain and Ireland, and the British Osteopathic Association has just launched what, over there, they call an "appeal" for $2,750,000 with which to endow a college, hospital, and research institution. This is at the rate of more than $32,000 for each person in practice. If we asked for a proportionate sum in this country, it would be something over a quarter of a billion dollars.

Are the British foolishly optimistic? It does not seem so, in view of the fact that they opened their drive with a banquet at which something over $100,000 was pledged, $50,000 of this coming from one individual. The enterprise is taken seriously in Great Britain and Canada. The *Toronto Star* for December 9 had a story starting under a two-column head on the front page and totaling nearly two solid columns. It told of the needs of osteopathy, the achievements of osteopathy and the friends of osteopathy, including Hugh Dalton, the Duchess of Atholl, Lord Elibank, Robert Boothby, a famous M. P., Robert Donat, a famous actor, Sir Bindon Blood, a famous general, Dudley Docker, a multimillionaire bank director, the Marquess of Londonderry, Arthur Greenwood, Lord Halifax, Rafael Sabatini and Sir John Reith. As a matter of fact, this list names only a few of the very prominent sponsors of the meeting and we could name several times as many who are equally prominent, or more so, in the public life of Britain. The *Star* correspondent went on to say:

"They certainly have an imposing list of names, and enough titled women to make a charity ball. Look at their list and you see that half the arms magnates, oil tycoons and peers in the realm send their own old bones or their wives' to be manipulated."

Attractive literature is being used with the names of the sponsors, the object it is hoped to attain, and the estimated cost. The cost of a site, a building, furniture, fittings, scientific apparatus and other necessary equipment is set at £347,606. The probable annual income, apart from voluntary subscriptions, is estimated at £18,000. This is to be from fees paid by students and contributed by in-patients, out-patients and their societies. The estimated annual expenditure is something over £42,000, leaving an estimated annual deficit of something over £24,000—perhaps higher the first few years.

The earnestness and enthusiasm of the backers of this movement seem natural in view of what they were told by the Select Committee of the House of Lords, in connection with the osteopathic bill. The profession was given to understand that justice for osteopathy would be forthcoming when it came to be taught in an acceptable British institution, and its truths scientifically demonstrated. In their efforts to achieve these ends the osteopathic profession in Great Britain have the hearty good wishes of their colleagues on this side of the water.

OSTEOPATHIC INFLUENCE IN THE MEDICAL WORLD

Fifteen or twenty years ago careful readers of allopathic literature every few months found something which seemed to have an osteopathic implication. Time passed. The osteopathic trend in the world of healing became more frequently evident and more pronounced.

Scarcely a week passes now without some observing member of the Association calling the attention of Central office to some description in some standard allopathic journal or text of more or less skillful application of elementary osteopathic technic. So much of this is so awful that we are tempted to consider it lightly and there is serious danger of our continuing to be lulled to sleep, and thus completely to overlook the mounting tide which threatens to engulf osteopathy.

The Editor of this JOURNAL has repeatedly expressed himself substantially as follows:

"The effects of investigation by 'old-school' doctors into manipulative methods may well be bad for those doctors, for the osteopathic profession and for the public, since the osteopathic concept is diametrically opposed to much that the drug doctors have been taught. They are liable to recognize only parts of the principle, accept them under protest and misinterpret and misapply them. They will continue to

discredit the name of osteopathy, its practitioners and its institutions in every possible way.

"They will claim that such manipulative methods as they use either constitute all that is of value in osteopathy or are far superior to osteopathy. They will assume and teach that they are in every way better equipped and prepared to use these methods, than are osteopathic physicians with their scientific training in the use of osteopathic methods based on a sympathetic and whole-hearted belief in its principles. The public will provide the victims for those drug doctors who are forced to take up manipulative methods against their own judgment by the popular demand which the medical publicity machine will undertake to make. It will provide victims for those who take up such methods because 'they may work,' but who are not very enthusiastic about them. It will provide victims likewise for those who adopt such methods and push them to the limit, just as they do any new thing."[1]

The Editor still believes in the realities of these dangers. There are others. While the average M.D. fulfills the prophecy just quoted, alert, careful, investigators in the "old school" are doing exactly the things which osteopathy should have done at least a generation ago. Attention has been called repeatedly in these columns to the work of Pitkin and Pheasant,[2] appearing under the head, "Sacrarthrogenetic Telalgia," in *The Journal of Bone and Joint Surgery* throughout the year 1936. These men went to the laboratories for facts and explanations which we have always needed.

Goldthwait took the ideas of sacroiliac disability and its correction bodily from osteopathy long ago. His progress was very slow, but when he and three other men finally did bring out a book, it was a better-looking scientific book than we had ever produced. It was comprehensive; it was convincing, and it must have been read widely for a second edition is on the market.

Allopathy is doing two things. It is making a more scientific investigation of some phases of the underlying facts of osteopathy than our own people in this country have ever made, and it is presenting its clinical results in a convincing way. Allopathy has the traditional background which enables it to say a thing, regardless of the evidence, and then stick to it (if it will—consistency never has bothered them much). If it works out clinically for an M.D., it is not absolutely necessary for him to prove it scientifically, no matter how insistently he may shout that the clinical results secured by others are meaningless until corroborated in the laboratory.

Allopathy is on the way to another coup. There are very disturbing indications that in our commendable efforts to make of ourselves general practitioners we are leaving the way wide open for a group of allopaths to become the manipulative specialists who will complete the task of separating us from our birthright. There are enough M.D.'s in the country to enable them to match every one of us man for man without missing the doctors that it would take to do it. While, as pointed out earlier, this might be a bad thing for osteopathy, for the public, and, in some ways, for the M.D., yet it might solve the financial difficulties of a lot of young M.D.'s, who otherwise find themselves in a profession that is too numerous under our present economic set up.

What does all this mean to us? It means that there are three real dangers facing us in this one sector. Any one of the three calls for our best thinking and acting. It means that the enemy is adequately financed with tax money and with foundations and other philanthropies. It means that in addition to the legislative and administrative dangers which face us, in addition to the social security problem, in addition to student recruiting needs, and other phases of public education, we must, among ourselves or from our friends, raise funds *now* for our own research work, for our own books, and for otherwise overcoming this threefold menace.

This is a part of the thing for which the House of Delegates voted to increase the amount which each member will pay to conduct the affairs of organized osteopathy, and this is a part of the thing for which the Committee on Public and Professional Welfare was organized, and for which it asks the support, moral and financial, of every osteopathic physician. It is not a dream. It is an actuality.

1. Hulburt, Ray G.: The Trend Toward Osteopathy. Jour. Am. Osteo. Assn., 1927 (July), p. 898; Will Drug Schools Teach Osteopathy? Jour. Am. Osteo. Assn., 1929 (June), p. 775; Backache and Body Mechanics. Jour. Am. Osteo. Assn., 1931 (June), p. 421.

2. Pitkin, H. C., and Pheasant, H. C.; Sacrarthrogenetic Telalgia. Jour. Bone and Joint Surg., Jan., Apr., July, Oct., 1936, and Jan. 1937; reviewed in Jour. Am. Osteo. Assn., Apr., May, Nov., Dec., 1936, and Mar. 1937.

THE CONVENTION HABIT

My first introduction to A.O.A. Conventions was in 1911 during the vacation following my freshman year in Kirksville. My memory retains only a few of those early impressions, but among the most pleasant that I recall are President A. G. Hildreth and his charming family at the President's ball.

The announcements in connection with that Convention referred to it as the Sixteenth Annual Convention of the A.O.A. This coming summer we look forward to our Forty-Second Annual Convention in Cincinnati, Ohio.

The intervening years have wrought great changes in the style of our conventions, because they truly reflect the scientific and numerical growth of osteopathy. Actually these conventions have become the occasion for an inventory of ourselves and an accounting of our stewardship of osteopathy to the public. We take the inventory by the scientific character of the program material presented. We give an accounting of our stewardship by releasing this same material for public appraisal through the press and radio.

An annual convention, then, is a milestone measuring progress. Those who attend are a part of this transitional phase and react with it. Those who are absent, through inclination or otherwise, usually mark time until the echoes of new ideas

reach them when they either do a quick step to catch up or fall behind and suffer the effects of a slower pace.

Not all of convention stimulus can be so easily analyzed. There are many other factors, intangible in themselves, that cause these gatherings to attract a larger attendance each year. There is a definite psychological reaction that lifts one when mingling for a few days with others who face identical scientific and economic problems. This effect is not transitory, but continues a variable length of time and manifests itself by aroused enthusiasm and closer application to practice for months following.

The convention habit is the only one I have that pays its own way. It provides altogether an opportunity for professional advancement in a social atmosphere incomparable in the richness of old friendships, interesting cities, modern hotels, and smart people. It is not an easy habit to overcome, but who would think of even trying to overcome it? Those who are experienced consider it as a remunerative luxury and rarely if ever attempt to correct it.

EDWARD A. WARD.

PNEUMONIA STUDY

The United States Public Health Service called into conference an advisory committee on the prevention of pneumonia mortality, which met in Washington on November 12 for an informal preliminary discussion, as mentioned in THE JOURNAL last month. There was no osteopathic participation, although pneumonia, as it looks to the osteopathic profession, has been explained personally to the Surgeon General of the United States Public Health Service.

As would be expected, the use of serum takes an important place in any such conference, and the use of serum depends upon knowing what type of pneumococcus is present (predominant).

News writers report that New York City recently opened five municipal laboratories to make it possible for physicians quickly and accurately to determine which type of pneumonia each victim has. *News Week* for December 13 (probably greatly exaggerating the number of places where typing can be done) says:

> Although most small-town hospitals now have facilities for typing pneumonia—and hence the ability to use serum treatments—the rural doctor isn't so fortunate. Once pneumonia's killer microbe strikes, he can prescribe complete rest and a high-calory invigorating diet. Beyond that he can do little.

What an admission that is, and how it bears out the facts which the mortality figures show!

News Week goes on: What he'd like is a single substance, fatal to all type of pneumococci—thus, effective in all cases of pneumonia."

Wouldn't he, though. It is that kind of illogical wishful thinking which has marked so much of the history of allopathy. With the possible exception of three or four substances used to combat protozoa, nothing of the kind has ever been discovered or developed outside the living body.

It is the constant, fervent wish for such a substance that makes so illogical the hostility of the medics to those who would show them the way to the use of such a remedy.

It is the production of such a substance, specific for whatever germ is involved, that the osteopathic physician stimulates when he treats his patients in accordance with osteopathic principles. The doctors of medicine seem to think they have found a chemical with a name which will hit the layman even harder than sulfanilamide—hydroxylethylapocupreine. "Last winter the workers tried it on 100 patients. *Only 27 died.* According to citywide mortality averages, 45 should have perished." (Italics ours.)

(If any osteopathic physician lost 27 per cent out of any considerable number of patients treated in accordance with osteopathic principles, he would hang his head in shame.)

Early in December the health officers of a midwestern state held a conference, and one of the subjects discussed was "Lobar Pneumonia and Serum Therapy." An osteopathic physician who was in attendance said:

> There seemed to be a dozen times I thought the speaker could have clinched an argument or expounded a whole theory if he even knew of osteopathy. Jenner and Pasteur were really the authorities represented and why the connecting statements of Dr. A. T. Still weren't quoted is more than I can see. The big fellows know how 32 varieties of one germ look and act and all about why the patient should die and then seem vague when admitting that some get well without a certain serum or adjunct.

We have the answer. We know the answer. Why can it not be presented? Partly because the other school is backed by tax money—federal, state, county, city and others. Partly because the other school has capitalized such confidence as it has been able to build up in the wealthy, and caused them to establish great foundations and endowments.

We also have friends among the mighty. We have dawdled along, happy if we received a crumb, content if we received nothing, to help us show the people how their lives could be saved; to help us convince legislators and administrative officers of our rights; to help us build bigger and better schools and educate more doctors of osteopathy.

At last we have seen the need. The House of Delegates by an overwhelming majority voted that we should pay more to support the work of the American Osteopathic Association—a total of nearly six cents a day instead of nearly three cents a day for each member.

The American Osteopathic Association has also set up the Committee on Public and Professional Welfare. It aims to assemble the pertinent facts concerning osteopathy and to place them where they will count for something. An opportunity has been given to the profession to support this work

which ultimately should lead to the same type of popular support which is given to so-called "old-school" medicine. To date there are nearly 8,000 osteopathic physicians in practice who have not contributed a cent to the fund. Yet the Committee has gone on and has made a splendid start.

There are two things, yea, three, which every reader can do. He can pay his dues for 1938-39 (plans can be made more intelligently if this is done now). If that is impossible, a dollar a week or more can be put aside so that the payment can be made in early May or sooner. He can induce a neighbor, who is not a member, to join the American Osteopathic Association. He can support the Committee on Public and Professional Welfare with work which he will be asked to do, and with funds.

YOU'LL HAVE TO DO IT YOURSELF

Since it was first proposed two years ago that organized osteopathy take its story about industrial back injuries and other industrial injuries to organized labor, I have had considerable correspondence with osteopathic physicians here and there concerning the best way to go about this important work.

In addition to this direct correspondence I have seen copies of many letters of inquiry which have been addressed to others.

One thing which has struck me about this correspondence is that many seem to believe that the Central office or the Bureau of Industrial and Institutional Service has or ought to have plans, men, and money by which this work could be done for them in short order.

The realities of the situation are, of course, quite otherwise. To begin with, this idea of selling osteopathy to organized labor is, comparatively speaking, a new idea. It has not been tried, except experimentally here and there, and no one in or out of the A.O.A. knows very much about how we should proceed. All that the Central office can do for us in this matter is being done. This consists of taking care of correspondence, referring it to the proper person for attention, sending out such educational material as is available on request, and in general serving as a clearinghouse for ideas and plans as they develop.

The members of the Bureau of Industrial and Institutional Service are individuals who are engaged in the practice of osteopathy in their several communities. They serve without remuneration as members of this Bureau. They now have pretty well-defined ideas as to how this work should be carried on. They will help you all they can with plans and suggestions as to how you should proceed, but obviously when it comes to selling the program to the thousands of local labor leaders, rank and file members of trades unions, labor lawyers, editors, and organizers *you'll have to do it yourself*.

Equally plain is the fact that if you are the one who will benefit locally by this increased market for osteopathy, you are the one who ought to do it.

Whether you live in Detroit or Davenport, Pen Yan or Portland, if John Smith, member of the local moulders union, or Frank Andrews, editor of the local labor paper, ever finds out that osteopathy is the specific treatment for back strain, you'll have to tell him. You'll have to tell him and you'll have to keep on telling him until he does something about it. If you keep telling the worker, he'll join with his fellows in a request that his employer make osteopathy available for him when he wants it.

There are literally thousands of communities in this country where this work ought to be done. It will take you and literally thousands of others to do it. When we make up our minds to do this work thoroughly, you in your community and I in mine, great things will be accomplished.

E. P. MALONE.

ADVANCE MEMBERSHIP HONOR ROLL

As stated in the December JOURNAL it has been decided to establish an Honor Roll to bear the names of those whose dues for next year (1938-39) are completely paid in advance. The words, "Honor Roll," will appear upon their membership cards.

In order to make any intelligent estimate of the amount of work which can be done next year it is necessary to know with some precision what the income will be. Central office workers in past years have been able to predict the membership tendency very accurately. (Each of the last three years has marked an increase of almost exactly 500 members.) But with the dues adjusted it is much harder to estimate. If it can be known by May or early June about what the membership for 1938-39 will be, then other items of income also can be estimated and a serviceable budget prepared.

We list below those whose 1938-39 dues are paid in full at the time of going to press. This list includes one woman who is in her first year of practice and one man who is no longer in active practice. It includes one who has given freely of time and money as a member and zone chairman in the Committee on Public and Professional Welfare, and one who has sacrificed much to support the work of that organization in his own state and who is right now fighting before his own supreme court for his very professional life. The medical machine threatens to wipe out in one blow his accumulated practice and the hospital he has been so many years in building up. In all probability each of the others is equally worthy of special mention.

C. B. Atzen, Omaha, Nebr.
Merrill S. Bartlett, Ada, Okla.
B. L. Gleason, Larned, Kans.
Lily G. Harris, Oakland, Calif.
Harold I. Magoun, Denver, Colo.
Frances C. Nerby, Philadelphia, Pa.
Walter G. Shay, Sturgis, Mich.
Georgia A. Steunenberg, Los Angeles, Calif.
Robert B. Thomas, Huntington, W. Va.

Special Article

WHERE OUR STUDENTS COME FROM

ASA WILLARD, D. O.
Missoula, Mont.

This, the 1937 listing of students by states in our colleges, includes, as did all previous listings, only those enrolled and in school in the regular four years professional course during the month of October. No preosteopathic, postgraduate or special students are included. For the past eleven years the students in all of our colleges totaled as follows:

Year	Number	Year	Number
1927	1,559	1932	1,711
1928	1,546	1933	1,726
1929	1,551	1934	1,841
1930	1,705	1935	1,826
1931	1,750	1936	1,860
		1937	1,977

Last year we recorded the largest number of students ever enrolled in our colleges up to that time.

This year we have 117 more students than we had last year, a total of 1,977.

Last year it was recorded that "The year's total increase of 34 students is due to the substantially increased attendance in four of our colleges which was sufficient to make up the loss of 80 students in the other two." The same colleges are affected in like manner this year.

Four colleges this year had a total increase of 160 while the Los Angeles and Philadelphia colleges, which lost 80 last year, (Los Angeles 52, Philadelphia 28) lost 43 this year, Los Angeles losing 11 and Philadelphia 32. Los Angeles then has 63 less than two years ago, and Philadelphia 60 less. In 1934 Philadelphia inaugurated the one year preosteopathic course, and this year required two years of college work of its freshman matriculants. Los Angeles began requiring the two years college preliminary last year.

The number of students reported by colleges in each year of the past eleven years will be seen in the following table.

NUMBER OF STUDENTS REPORTED

	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937
Chicago College of Osteopathy	124	131	140	117	101	81	82	92	111	140	194
Des Moines Still College of Osteopathy	226	237	209	203	197	193	221	227	163	177	182
Kansas City College of Osteopathy and Surgery	103	109	117	125	140	150	163	181	194	211	237
Kirksville College of Osteopathy and Surgery	639	598	566	607	594	630	623	718	735	789	864
Los Angeles College of Osteopathic Physicians and Surgeons	205	217	217	266	298	308	294	279	295	243	232
Philadelphia College of Osteopathy	262	254	302	387	420	349	343	344	328	300	268

For the fourth successive year Missouri heads the procession with the largest number of students sent to our osteopathic colleges in proportion to population. In the past eleven years this record has been held successively by Montana, Rhode Island and Missouri. Montana's record, a few years ago, of a student sent for every 14,000 of her population is still unequalled. Missouri sent 198 students this year, the largest number she has ever sent. Having a population of 3,629,367, she thus sent a student for every 18,200 people in the state, a proportion which, if maintained by all of us in the United States, with a population in round numbers of 120,000,000, would mean that our colleges would have in them about 6,600 students or three and one-third times as many as they do have.

Vermont is again second with student contribution in proportion to population, though she again dropped a little this year.

California, which for each of the six previous years sent the largest total number of students of any of the states, this year drops to second place, first place being taken by Pennsylvania with 211 students contributed, the largest number in her history.

Illinois, with 145 students in our colleges this year, makes the most striking increase, contributing the largest number of students that she has ever contributed in any one year and by over 30 per cent, sending nearly 60 per cent more this year than she did last year. As seen from the chart by states last year she sent 90 students and this year 145.

States which sent this year the largest number of students they have ever contributed, are: Pennsylvania, Missouri, Michigan, Georgia, Wisconsin, Illinois and Kansas. Canada also broke all previous records. The first five of the states named also last year exceeded all their previous records.

States sending the smallest number of students this year that they have contributed in a decade, are: Rhode Island, Iowa, Nebraska, Massachusetts, New York, Connecticut. Six years ago Rhode Island headed the list of all the states with the number of students sent in proportion to the population, sending 34. This year she sent but 9. Iowa's student contribution has steadily declined since 1934. Each year since then she has established the record of sending a smaller number of students to our colleges than she had ever sent in any one year before, and this year she continues to do this in the face of the notable step-ups of her neighbors, Illinois and Missouri.

A little comparative study of this table of students by states will be found very interesting. As we have repeatedly suggested before, one should sit down with this table and figure out his own state's status and compare it with others. He should divide his state's population by the number of students his state sent this year. In that way he will ascertain how many people from his state it takes to furnish one student to our colleges. Then let him take the number representing all the people it takes to send a student from his state and divide by it, 120,000,000, which in round numbers stands for all the people in the United States at the last census. The result will be the number of students that would be in our colleges if each state did just the same as the state in question. The number of students sent in proportion to population is of course a better criterion of student contribution than is the mere total number of students. For instance little Vermont, away off in the northeast corner, far removed from colleges, with her 359,611 people in sending 14 students is still doing three and one half times as well as Wisconsin, even though Wisconsin breaks all her own records this year, for which she should be praised. Wisconsin has 2,939,006 people and so is sending a student for every 86,400 persons in the state while Vermont is sending a student for every 25,600 of her people. Vermont in sending 14 students is doing seven times as well as Indiana, which sends 19, but sends them from 3,238,503 people. Hawaii, out in the middle of the Pacific ocean, in sending 3 students is doing twice as well as the prosperous District of Columbia does in sending 3, for while the 1930 census only shows the latter with 33 per cent more population than Hawaii, thanks to the various new deal alphabetical organizations it actually has twice the population of Hawaii. In general, as has always been the case, the states regulated by independent boards send a much larger number of students in proportion to population.

For their cooperation in compiling this student tabulation we are indebted to Assistant Dean Russell C. Erb of the Philadelphia College, Dean H. G. Swanson of the Kirksville

College, Dean J. M. Peach of the Kansas City College, Dean R. N. MacBain of the Chicago College, Miss Vera E. Potter, registrar of the Los Angeles College and Mrs. K. M. Robinson, secretary of the Des Moines Still College.

STATE PROVINCE OR COUNTRY	Population	Number of Students '27	'28	'29	'30	'31	'32	'33	'34	'35	'36	'37
Ala.	2,646,248	0	0	1	2	2	3	4	5	2	4	2
Ariz.‡	435,573	2	4	3	3	6	8	6	6	9	6	9
*Ark.‡	1,854,482	3	3	2	3	3	4	4	2	3	5	7
*Calif.	5,677,251	187	143	117	153	181	199	217	214	253	207	204
Colo.**	1,035,791	22	24	18	17	15	14	11	15	13	12	13
*Conn.‡	1,606,903	17	12	15	12	11	7	15	12	12	11	10
Del.	238,380	7	5	6	7	8	6	7	5	2	2	3
*Fla.	1,468,211	12	11	11	8	10	11	11	18	16	12	18
*Ga.	2,908,506	6	4	8	7	10	12	10	9	13	15	19
*Idaho	445,032	5	5	4	2	0	4	6	6	8	8	5
†Ill.	7,630,654	107	94	99	111	97	99	92	91	80	90	145
Ind.	3,238,503	26	28	19	23	19	13	12	15	16	18	19
*Iowa‡	2,470,939	91	100	94	95	97	100	107	112	91	81	70
*Kan.‖	1,880,999	59	74	70	79	84	75	62	70	63	77	87
Ky.	2,614,589	2	4	3	5	8	4	5	4	4	11	8
*La.	2,101,593	4	3	0	1	1	1	1	1	1	2	2
*Me.	797,423	21	23	23	26	28	28	26	32	29	28	26
*Md.	1,631,526	3	3	1	1	3	3	1	2	2	2	4
Mass.	4,249,614	119	127	151	74	89	94	97	99	83	75	68
*Mich.**	4,842,325	77	66	73	72	83	80	77	110	111	136	172
*Minn.‡	2,563,953	33	41	29	24	22	16	16	11	14	20	22
*Mo.	3,629,367	144	135	122	128	135	164	184	187	185	193	198
Miss.	2,009,821	0	0	0	0	0	0	0	1	1	3	3
*Mont.	537,606	23	36	33	38	24	18	14	11	16	17	18
*Neb.‡	1,377,963	31	33	42	51	51	48	44	48	37	33	31
*Nev.	91,058	0	0	1	0	0	1	0	0	0	0	0
N. J.	4,041,334	55	53	56	69	72	77	82	90	88	84	74
N. H.	465,293	6	7	6	8	3	2	4	6	7	8	6
N. Y.	12,588,066	103	98	110	128	136	113	108	116	113	102	94
*N. M.	423,317	2	2	0	0	3	2	2	3	5	3	3
*N. D.	680,845	15	8	8	5	3	1	2	4	2	5	5
*N. C.	3,170,276	2	1	2	1	3	6	6	8	9	8	8
†Ohio	6,646,697	172	161	179	180	159	146	144	145	137	139	166
*Okla.‡	2,396 040	10	8	9	10	19	23	27	32	37	45	39
Ore.‡	953,786	14	20	17	13	11	6	5	10	11	11	7
*Pa.	9,631,350	133	124	134	143	174	148	144	172	189	196	211
R. I.	687,497	21	21	30	31	33	34	26	23	16	13	9
S. C.	1,738,765	0	0	0	0	0	3	1	1	1	1	1
*S. D.	692,849	8	10	11	15	13	9	9	13	9	9	11
*Tenn.	2,616,556	5	6	2	4	6	4	3	2	3	5	7
Tex.	5,824,715	14	17	23	24	20	16	23	25	22	37	26
*Utah	507,847	0	0	1	1	1	4	4	4	1	0	2
*Vt.	359,611	14	9	5	2	2	7	13	16	18	15	14
Va.	2,421,851	2	2	2	2	2	2	2	4	5	4	4
*Wash.‡	1,563,396	18	16	9	15	8	9	7	9	10	12	10
*W. Va.	1,729,205	4	3	5	5	7	3	5	4	7	7	8
Wis.‡	2,939,006	21	17	20	25	23	25	19	21	21	26	34
Wyo	225,565	1	2	1	4	4	4	4	3	6	4	5
D. of C‡	486,869	1	1	1	2	1	1	1	1	1	2	3
*H. I.	368,336	2	0	1	2	0	1	0	1	3	2	3
Canada	10,374,196	22	42	34	41	36	29	27	20	27	35	48
Sweden	6,162,446	2	3	0	0	0	0	0	0	0	0	0
Norway	2,814,194	1	1	1	0	0	0	0	0	0	0	0
Scotland	4,842,554	2	1	1	1	1	2	1	3	3	1	1
England	37,932,137	6	7	3	12	9	9	10	7	6	10	9
Japan	66,296,000	3	3	0	2	2	1	0	0	0	0	0
Australia	6,575,255	1	1	0	0	0	1	0	2	2	2	2
Mexico	16,404,030	2	2	0	0	0	1	0	1	1	1	0
Brazil	41,477,827	1	0	0	0	0	0	0	0	0	0	0
S. Africa	6,929,000	1	0	0	0	0	0	0	0	0	0	0
P. I.	12,590,369	1	0	0	6	1	1	1	1	1	1	1
Ireland	2,971,992		1	1	2	2	1	1	0	0	1	1
Czech.	14,726,158		1		0	0	0	0	0	0	0	0
Russia	156,168,700		2		3	4	3	0	1	1	0	1
France	41,834,923				0	0	0	0	0	0	0	0
Armenia				1	0	0	0	0	0	0	0	0
New Zealand	1,587,547			1	0	0	0	0	0	0	1	1
Bermuda I.	27,789			1	0	0	2	1	1	1	1	0
Venezuela	3,226,000				1	0	0	0	0	0	0	0
China	474.787,386				2	2	2	0	0	0	0	0
Colombia	7,851,000				1	0	0	0	0	0	0	0
Cuba	3,638,174					1	1	0	0	0	0	0
Germany	65,300,000						2	0	0	0	1	0
Denmark	3,590,000						1	0	0	0	0	0
Costa Rica	527,690						1	1	1	1	0	0
Holland	7,832,175									1	0	0

*States with Independent Osteopathic Boards.

† Has an osteopathic examiner or a committee of osteopathic physicians.

‡ States with Basic Science Boards.

** States with Basic Science law to go into effect in 1941.

‖ Has a Basic Science law which does not apply to D.O.'s.

NOTE—The population of American States is taken from the 1930 census, and of Canadian provinces and other territories within the British Empire from the 1931 census (except South Africa). Other populations are from estimates and censuses made within the last four years.

PRIZE ESSAY CONTESTS FOR GRADUATES AND UNDERGRADUATES

A cash prize of $75.00 will be awarded by an anonymous donor, through the American Osteopathic Association, for the best thesis submitted by a member of the profession on the subject, "Angina Pectoris with Special Reference to Its Mechanical Causes."

No length has been set for the manuscripts but the subject should be discussed from the clinical as well as from the pathological or laboratory point of view.

All papers submitted by graduate students, faculty members, or practicing osteopathic physicians should be sent directly to the Central office of the Association *not later than April 15, 1938,* for forwarding to the committee of judges which will be appointed to peruse the manuscripts and to select the prize-winning paper.

Entrants should present their papers in typewritten form, double spaced on one side of the paper, with liberal margins. The name of the author should not appear on the manuscript but should be contained in an accompanying envelope.

Manuscripts will be judged on the basis of the treatment of subject matter, accuracy of statement, originality, literary excellence, and a bibliography and sources of authority.

A contest on the same subject was held last year open only to students in the approved osteopathic colleges. A prize of $25.00 was awarded to the best paper submitted in each of the colleges, a specially appointed committee in each college determining the prize winner. These manuscripts were then submitted to a national committee of three judges who selected the winner of the grand prize of an additional cash award of $25.00. This paper, by Mr. L. Raymond Hall of the Kansas City College of Osteopathy and Surgery, appears in this issue of THE JOURNAL.

This year another undergraduate contest is being sponsored by the same donor, a cash prize of $25.00 to be awarded in each college and an additional grand prize of similar amount to be presented to the student whose paper is judged to be the best among the prize winners in the various colleges.

The subject assigned is "Essential Hypertension," and the papers are to be limited to 2,000 words. Committees have been selected by the authorities in the respective osteopathic colleges to administer the contest in each college, to select the prize-winning paper, and to forward it to the Central office *not later than April 15, 1938,* to be thereafter reviewed by each member of a committee selected by the Executive Committee of the Association, which committee will select the winner of the grand prize.

The college committees are as follows: Chicago College of Osteopathy: R. N. MacBain, S. V. Robuck, W. Don Craske; Des Moines Still College of Osteopathy: L. L. Facto, J. M. Woods, O. Edwin Owen; Kansas City College of Osteopathy and Surgery: George J. Conley, G. N. Gillum, J. M. Peach; Kirksville College of Osteopathy and Surgery: H. G. Swanson, Earl Laughlin, Sr., H. D. McClure; College of Osteopathic Physicians and Surgeons: Carle H. Phinney, W. W. W. Pritchard; Philadelphia College of Osteopathy: Frederick A. Long, Paul T. Lloyd, Ralph L. Fischer.

The announcement of the awards in both the undergraduate and the graduate contests will be made in the general sessions during the annual convention of the Association in Cincinnati in July, 1938.

The donor, who desires to maintain his anonymity, hopes to encourage careful observation, and original thought and investigation among osteopathic students and doctors, and to foster the development of research by individuals.

He reserves the right to publish any or all of the winning essays.

It is hoped that many excellent manuscripts will be submitted in both the graduate and the undergraduate contests, the latter (except for the selection of the winner of the grand prize) to be conducted by the essay contest committees in the colleges, and the former to be administered by a national committee of judges.

D. S.

Surgical Supplement

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The American College of Osteopathic Surgeons

Volume 1 JANUARY, 1938 No. 1

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Volume 1 **January, 1938** **No. 1**

THE NEED FOR CLOSE COOPERATION BETWEEN GENERAL PRACTITIONER AND SURGEON

Surgical mortality and morbidity have been greatly reduced in recent years. Though there are many factors which have contributed to this decrease, there are two of outstanding importance: first, a greater accuracy now than previously in diagnosis and a better understanding of what are surgical and what are nonsurgical conditions; second, better preoperative and postoperative care given to surgical patients than they formerly received.

Though the field of surgery is much broader than it used to be and its boundaries are continuing to be extended, the contraindications as well as the indications for surgery are better understood than formerly and the importance of each are receiving better evaluation before the decision for operation is made. In other words, fewer exploratory operations, and fewer operations in the presence of distinct contraindications, are performed.

The improvement in pre- and postoperative care has developed as a result of a more thorough knowledge of the physiology involved in surgical problems. This knowledge and the practical application of it have been greatly increased even in the past two decades.

We have abundant proof that osteopathic therapy is capable of contributing much valuable aid in the pre- and postoperative care of surgical cases, which will hasten the recovery and aid in obtaining the maximum benefit possible for surgical patients. We as a profession have long contended that surgical measures, when indicated, are but a step (though a necessary one), in the normalizing process of a surgical patient; we have also contended that osteopathic care both before and after operation, in conjunction with other physiological measures, is not only valuable but further necessary to accomplish the maximum benefit in most cases.

We have not hesitated to learn and to employ the physiological methods of treatment developed by other schools of practice, but do we always employ osteopathic therapy as conscientiously and thoroughly as its value deserves? We are remiss in our duty to our patients if we neglect to utilize on surgical patients the same osteopathic principles which we employ on nonsurgical patients. If the principles are sound enough to justify our existence as a separate school of therapy, and if there is a reason for their employment in nonsurgical cases, is not the indication for their employment greater, and the need more urgent, in surgical patients? Can we conscientiously advocate and practice osteopathy on nonsurgical cases and, realizing its benefit when properly applied to surgical patients, ignore the responsibility either of acquainting the patient of its benefit or neglecting to judiciously apply it?

Surgical mortality and morbidity can be reduced still further if the general practitioner and the surgeon will cooperate more closely in the care of the surgical patient, not only to promote an early discovery of surgical conditions, but also to collaborate in the preparation of these surgical cases for operation and to work in harmony in the aftercare which most surgical patients need in order to receive all the benefit that it is possible to give them. The patient should have the advantage of both the surgeon and the general practitioner, not by each working independently but by their collaborating together. In this manner the usefulness of both to the patient will be increased and our surgical results continue to improve.

HARRY L. COLLINS.

COMMON FRACTURES FOLLOWING ACCIDENTS

The increasing number of accidents as a result of modern methods of travel and transportation are keeping the accident wards of our hospitals filled with patients. Of the various injuries resulting from such accidents, those of the skull, spine, and pelvis are among the more serious and it is to these cases that we wish to call your attention.

Fractures of the head most commonly occur through the weakest portion of the skull, the base. These basal fractures are frequently compounded through the nose and ear so that there is an avenue for the introduction of infection with the possibility of the complication of meningitis or even encephalitis. With a loss of consciousness, attention is at once called to the head injury. Skull fracture is suspected in the presence of escape of blood and cerebrospinal fluid from the nose, mouth, or ear and the bruising or discoloration about the ear or eye. The demonstration of a basal skull fracture by the x-ray is often very difficult, and if the patient is in a critical condition, often a dangerous procedure. It should be remembered that the skull fracture is in itself not very important, but that life is lost because of the damage to the brain tissue, and further that the treatment in such cases is directed to the brain and not to the break in the brain-box. Conservative measures of dehydration plus careful nursing will suffice for the majority of cases and surgical interference is usually necessary only in extradural hematoma and those cases which require additional space for the expansion of the brain, for in brain injuries there is an edema

of the brain produced by the same mechanism which operates when any tissue becomes edematous following an injury.

Fractures of the spine may be the result of direct trauma in which case either the transverse or spinous process may be broken, or as is most usual, the fracture results from a hyperflexion of the vertebral column and there is a compression of the vertebral body. This compression fracture is the most common spinal injury and occurs at the lumbodorsal junction in more than three-fourths of the cases. Compression fracture is dangerous if a dislocation occurs at the same time, for here again, prognosis depends upon whether or not the nervous tissue has been damaged. Uncomplicated cases of compression fracture, without cord injury, give a period of disability of six months or so while those cases of broken back with cord damage are usually permanent. More than a third of all cases of compression fracture of the spine are not recognized at the first examination.

The third condition, fracture of the pelvis, is the result of crushing types of accidents. The complications of visceral injury such as a laceration of the bladder, urethra, rectum or vagina make the condition very serious. In fractures of the pelvis there is usually little deformity, but the patient is unable to stand or sit. The presence of bleeding from the urethra, vagina or rectum should call an immediate investigation. If the patient is unconscious from a head injury, the additional injury to the spinal column and the pelvis are frequently overlooked.

Fractures of the skull, spine, and pelvis are exceptionally common in the injured patient of today. The break in the continuity of the bony structure is of secondary concern, for life is lost, or disability permanent, because of the injury to nervous tissue or visceral tissue. It is the early diagnosis of these conditions and the prevention of complications that the modern treatment is directed.

GEORGE M. LAUGHLIN, D.O.

Historical Resumé
American College of Osteopathic Surgeons

A. C. JOHNSON, D.O.
Detroit

In the evolution of osteopathy as a science of healing there came a time, in the normal course of events, for the birth of a subsidiary group which had as its purpose the fostering of commendable surgical practices.

As is often the case, creative ideas were awakened within the minds of several osteopathic surgeons simultaneously and the American College of Osteopathic Surgeons sprang into existence. It began to prepare itself for the task that was to become more arduous and more complicated as, with the passing years, the science of osteopathy developed into a broader and more respected service of healing.

Since osteopathy had its beginning, the profession has had (and will continue to have) within its ranks its positive and negative forces in relation to progress. This is true of any organization. Peculiarly, this new profession has been obliged to develop in an atmosphere saturated with the concept of chemistry as the basic principle in any science of therapeutics. It would be strange, indeed, if osteopathy were to restrict itself entirely to manipulative methods, even if its followers were at all times wholehearted in their loyalty to the teachings of Dr. Still.

Being positively and at the same time conservatively progressive, a number of osteopathic surgeons in attendance at the 1926 A.O.A Convention in Louisville, Kentucky, met on June 30 for the purpose of banding together for "the study of surgical diagnosis, technic, pathology, and the application of osteopathic principles thereto; to establish standards for membership and provide for the granting of degrees to recognized osteopathic surgeons."

It is plain that these men were desirous of retaining the osteopathic concept in its relationship to the practice of surgery, for each of them was sufficiently experienced in surgical practice to recognize the value of Dr. Still's teachings in the care of surgical patients. Up to the present time that osteopathic influence prevails wherever the members of the American College of Osteopathic Surgeons gather.

An examination of the records of the first meeting in Louisville discloses the names of the following in attendance: Drs. W. Curtis Brigham, Orel F. Martin, George M. Laughlin, Edward G. Drew, Harry L. Collins, O. O. Bashline, S. D. Zaph, John Deason, Ralph P. Baker, O. G. Weed, and R. D. Emery. A list of the charter members contains in addition, although some of these did not attend the first meeting, the names of Drs. A. C. Hardy, W. V. Goodfellow, Frank P. Walker, Frank L. Bigsby, H. C. Wallace, and Albert C. Johnson.

In the Circuit Court of Adair County, Missouri, January, 1927, term, application was made by the American College of Osteopathic Surgeons for a decree of incorporation. The petitioners were: Drs. George M. Laughlin, President; John Deason, Vice-President; S. D. Zaph, Secretary, and Orel F. Martin, Treasurer.

On the 26th of January, 1927, the decree was granted by the Court.

It appears that the original thought of the charter membership provided for yearly meetings of the College in conjunction with the A.O.A. Convention. But in August, 1928, at Kirksville, it was voted to hold the yearly meeting separate and distinct from the National A.O.A. Convention. The

purpose in view took into consideration the difficulties attending the procuring of satisfactory clinical facilities for meetings which necessarily were largely specialized in nature and of little interest to the general practitioner. Consequently, the College began its October meetings, later to be held in various cities of the nation, its members at the same time continuing to maintain a section with a place on the program of the A.O.A. Convention.

The first clinical meeting was held at the Southwestern Osteopathic Sanitarium, Wichita, Kansas, in October, 1928. Here the enthusiasm was raised to a high pitch, and to that first successful meeting the College owes much of its progress, for it was in Wichita that the members present became imbued with the desire to carry on.

Upon the organization of the American College of Osteopathic Surgeons, the American Osteopathic Hospital Association (which had been in existence previously), became superfluous because of the overlapping of function and membership. The American Osteopathic Hospital Association therefore dissolved, and the funds of that organization were transferred to the treasury of the new one.

The years 1929 to 1937 inclusive were marked by annual meetings of the College in the following cities: Kansas City, Mo.; Philadelphia; Los Angeles; Kirksville, Mo.; St. Joseph, Mo.; Des Moines, Iowa; Wichita, Kans.; Denver; and again Kirksville in 1937. The 1938 meeting is scheduled to be held at Cleveland.

From a charter membership of seventeen in 1927, the College has grown to a present membership of fifty-nine. Fellowship degrees have been conferred upon seventeen members. There are in all, thirty-three senior members, twenty-three junior members, two associate members and one honorary member.

Included in the membership is a majority of osteopathy's best known and best qualified surgeons, and there are those who will be the future standard bearers in osteopathic surgical progress.

Throughout the ten years of its existence, the American College of Osteopathic Surgeons has been gaining experience as an organization. Its growth in knowledge has been slow and sound, and the years to come will witness accomplishments of great value to the profession and to the public.

Many things have been done to improve osteopathic surgical service. Among the more important are: (1) the development of standards for teaching hospitals—to Dr. O. F. Martin must go the credit for most of that work; (2) the provision for the admitting of younger surgeons to junior membership—to Dr. E. G. Drew is given the credit for fostering this phase of College activity; (3) cooperation with the Bureau of Hospitals of the A.O.A. in the inspection of osteopathic hospitals; (4) recommendations having to do with qualifications to be required of surgeons performing operations in osteopathic hospitals; (5) the recent linking up of an editorial committee of the College with the editorial staff of the JOURNAL for the purpose of publishing a quarterly surgical supplement to the official publication of the American Osteopathic Association.

As has been mentioned, the first ten years of existence of the College has been a period of growth in experience. It is the prayer of the membership that the machinations of political and unethical factors will never be countenanced, and that honesty, sincerity, good fellowship and loyalty to proved osteopathic principles will always be the goals toward which the united surgeons of the osteopathic profession will strive.

The Wilshire
Collingswood at Third

Membership

American College Osteopathic Surgeons

W. D. Andrews.
Ralph P. Baker.
Charles L. Ballinger.
O. O. Bashline.
Raymond A. Biggs.
W. Curtis Brigham.
C. W. Bruninghaus.
Byron L. Cash
L. V. Cradit.
Harry L. Collins.
George J. Conley.
Thomas J. DeVaughn.
Frank A. Dilatush.
H. E. Donovan.
Edward G. Drew.
James M. Eaton.
Louis R. Farley.
Harold A. Fenner.
George S. Gardner.
B. L. Gleason.
Andrew R. M. Gordon.
C. Denton Heasley.
Walter E. Heinlen.
J. Clark Hovis.
William D. Jamison.
William W. Jenney.
Albert C. Johnson.
Edward B. Jones.
Margaret Jones.
Anton Kani.
Howard E. Lamb.
Earl Laughlin, Jr.
George M. Laughlin.
V. A. Leopold.
Paul T. Lloyd.
R. C. McCaughan. (Honorary)
Earl H. Mann.
Orel F. Martin.
L. M. Monger.
Carle H. Phinney.
Denzil G. Reid.
Glenn O. Rossman.
Walter F. Rossman
Robert Rough.
Frank W. Shaffer.
John P. Schwartz.
Joseph D. Sheets.
R. A. Sheppard
M. S. Slaughter.
Carlton Street.
William E. Waldo.
Frank P. Walker.
H. C. Wallace.
O. G. Weed.
Albert B. Wheeler.
George C. Widney.
Q. W. Wilson.
Philip A. Witt.

Symposium

Modern Treatment of Common Fractures

Fractures of the Skull

J. P. SCHWARTZ, D.O.

Des Moines, Iowa

The age of speed, with motorization of our populace, has produced a disabling force and mortality comparable to any and all plagues of the past. It has been conservatively estimated that 125,000 people now receive head and spinal injuries over a period of one year and that this total is rapidly increasing. Unlike many other diseases, it is always epidemic and for practical study, pandemic. The physician in the most remote village administers to these victims as frequently as does the physician in more populous communities. In fact, statistics show that 64 per cent of motor accidents occur in rural districts. Inasmuch as 60 per cent of skull fractures are the result of motor accidents, treatment becomes primarily the problem of the suburban hospital and physician. No one, therefore, posing as a practitioner of the healing art can afford not to be familiar with certain pertinent facts that are available today in the diagnosis and treatment of head injuries.

The words *head injuries* expresses the clinical picture often resulting from accident better than *skull fractures*. As Cushing[1] has so aptly put it, "It is the fractured skull which is exhibited in our museums not the damaged brain. . . . But, . . . what has happened to the skull is of far less moment than what has happened to the brain, and this has been given less study." It therefore follows that our important consideration is that of intracranial damage. The presence of a fracture is, however, of primary importance when it occurs as a depressed or compound one or involves a paranasal sinus or the mastoid region.

The symptoms of craniocerebral injuries are variable. Each case presents a pathological picture individual to itself. We speak of skull fractures as being linear, depressed, or penetrating. The linear fracture is the most common and is also described as being fissured, bursting, or expansile. The bones involved in linear fractures separate at the time of injury, but immediately spring back together. The base of the skull being the weakest part, it is fractured most often. Depending on the force of the injury, symptoms vary from those of simple concussion to those of laceration and compression. Concussion has been defined as a "disruption of intracranial equilibrium" and generally implies unconsciousness, momentary or profound. Contusion and compression are closely associated together and imply edema, bruising, and hemorrhage and frequently lacerations of variable degrees. Increased intracranial pressure may, and usually does, result from contusion or compression injuries. With this degree of injury, coma may remain for days or even weeks. Periods of restlessness occur in prolonged coma. It has been observed that the longer the period of unconsciousness, the worse the sequelae will be after recovery. Contusion also produces projectile vomiting particularly on movement of the head. Fluctuations in temperature are quite common and offer an indication for prognosis. At first the temperature is subnormal. Blake[2] divides temperature into four groups and makes the following interpretation:

1. If the temperature is first subnormal and undergoes a rapid and progressive rise, the prognosis is unfavorable.

2. If the temperature stays subnormal and you are unable after several hours by stimulation to elevate it, the prognosis is unfavorable.

3. The prognosis is favorable if after the shock the temperature rises to normal and remains so.

4. If the temperature is first subnormal, rises gradually to 101 or 102 F., marks time for several days and then returns to normal, the prognosis is good; but if after remaining at 102 F. it later begins to rise, infection is evident and the prognosis is unfavorable.

It may be said that a rectal temperature above 103 F., except in a child, is of grave prognostic import.

Pulse rate varies from a slight slowing to a marked one, depending upon the degree of intracranial pressure. Pulse rate below 60 is dangerous. Even more dangerous is a rapid increase in pulse rate with a marked drop in blood pressure due to pressure on the vagus center in the medulla.

Respiration is slow and deep in early pressure, but with increase of intracranial pressure it becomes labored and of the Cheyne-Stokes type.

Headache is a common secondary symptom, appearing as coma lessens. It may persist for an indefinite period and is frequently the only inconvenience suffered by the patient in later months.

The first eight cranial nerves may be affected in skull fractures. The senses of smell and taste may both be affected and be lost permanently. In examining the eye, choked disk is not considered as an early symptom of intracranial pressure. However, daily examination of the eyegrounds is important because retinal hyperemia occurs early, and by observing the increasing engorgement one may estimate increasing pressure. Blakeslee[3] in an analysis of 610 cases of fractured skulls found 78 per cent manifested eye symptoms. Twenty-eight per cent of the total had conjunctivae and lid hemorrhages. Extrinsic muscle paralysis was most common in those supplied by the oculomotor nerve and was not usually permanent. Nystagmus was infrequent and pupillary changes were the most common eye symptoms present. Blakeslee[3] concluded that the poorest prognosis was that where fixation of the pupil was present, either dilated or contracted. He also concluded "that as a general rule the patient with eye changes in fracture of the skull has less chance of eventual recovery than the one whose eyes played no part in the clinical picture."

The facial nerve is frequently involved but rarely remains permanently so.

The auditory nerve is the most frequently involved and accounts both for varying degrees of deafness and disturbance of equilibrium.

Hemorrhage from the ear, nose, or mouth may occur. Hemorrhage from the nose and a gradual ecchymosis of the lower eyelid points to anterior fossae fracture, bleeding from the ears and also the nose indicates involvement of the middle fossae of the skull and hemorrhage from the posterior fossae is usually subcutaneous, showing itself around the mastoid process and extending down into muscles at the back of the neck. Large groups of statistics demonstrate the following facts: In hemorrhage from both ears and nose, the chances for recovery are two to one against the patient. In bleeding from one ear or from the mouth, the patient's chances are two to one for recovery.

The escape of cerebrospinal fluid occurs in about 5 per cent of skull fractures. It indicates a laceration of both the dura and arachnoid membrane. It is by no means always fatal and may act as a method of drainage preventing intracranial pressure. If the escape of cerebrospinal fluid persists, however, plastic operation to overcome the defect is necessary.

Emphysema of the face indicates a fracture through a nasal sinus which is considered to be a compound fracture. The frontal sinus is most frequently involved. In recent years operations have been performed to plug the nasal sinus opening with a strip of fascia, in an attempt to produce a closed fracture. It has met with considerable success in some surgeons' hands.

The treatment of head injuries is much a matter of the individual case. However, certain essentials are adaptable in part to all cases. Our first consideration is that of shock. The horizontal position may be better during this time, later to be changed to the sitting posture or high elevation of the head of the bed. Elevation of the head reduces congestion after reaction from the shock has taken place. External heat should be applied to the body. Body fluids should be maintained by hypodermoclysis or intravenous injection. Stimulants such as adrenalin or atropine may be indicated. Caffeine sodium benzoate has been used extensively and acts as a stimulant in addition to lowering intracranial pressure.

Ice bags should be used to the head (several, not just one). Pulse rate, respiration, temperature and blood pressure should be taken at frequent intervals. They are important criteria as to progress.

The promiscuous use of sedatives in the past has done considerable harm. Morphia should seldom be used. In addition to masking symptoms it further embarrasses a respiratory system which already is depressed. Barbiturates and bromides are useful for pain and restlessness. It should be repeated that *morphine is seldom indicated in head injuries.*

Bleeding from the ear or discharge of cerebrospinal fluid is best cared for by sterile cotton placed loosely in the meatus. Irrigation is never indicated and is justly condemned as promoting, rather than preventing, infection.

Dehydration, now universally employed in brain injuries, has no doubt materially lessened the mortality between 16 and 20 per cent. Ordinarily, dehydration is best accomplished immediately after the injury by the injection of hypertonic solutions of glucose rather than by limitation of fluids. Later, probably ten to fourteen days after the accident, if the patient is improving, these solutions can be discontinued and the dehydration maintained by limitation of fluids to 1,000 cc. in 24 hours. This should be continued for several weeks after leaving the hospital. It may be necessary to return to this routine from time to time for months after an injury if headaches return.

Rapid dehydration may be produced by the intravenous injection of 50 cc. of 50 per cent glucose. Its dehydrating effect lasts from three to six hours. It has further advantages of providing nourishment and combating acidosis. We have followed the practice of giving one unit of insulin to every 2 grams of glucose after three or four injections of glucose have been given. The use of magnesium sulphate also acts as a dehydrating agent. It may be given in the form of a saturated solution two ounces by mouth, every three hours until watery stools occur, or three or four ounces injected rectally as a retention enema.

Dehydration in children should be watched with extreme care, as a rule they do not tolerate it well. It may produce secondary bleeding or a marked rise in temperature that might be fatal.

Spinal puncture for cerebral dehydration has long been a controversial therapeutic procedure. We have those who advocate its routine use and those who go to the other extreme, not using it at all. No doubt, there is a happy medium for its indication. Adson[4] of the Mayo Clinic expresses his views on this procedure in the following:

> Many patients who gain consciousness promptly after their injury need no specal treatment except observation for the first forty-eight hours. If the patient fails to regain consciousness within two hours, I would advocate spinal puncture. If the pressure is increased or blood is present in the cerebrospinal fluid, I would drain off all the fluid that it is possible to obtain, and I would not hesitate to repeat the procedure two or three times within each twenty-four hours. When employing such a procedure, the head should be kept at a lower level than the lumbar canal. This drainage often has a therapeutic effect and eliminates further special procedures. In the occasional case, spinal drainage may give rise to complications resulting from prolapse of the cerebrum through the tentorial incisura or of the cerebellar lobes into the foramen magnum; when this is suspected, the head should be kept low during the drainage, withdrawal of fluid should be done slowly, and sterile saline solution should be in readiness for replacement of the bloody spinal fluid which has been withdrawn.
>
> Limitations of the intake of fluid to 1000 cc., and active dehydration by the administration of hypertonic glucose, sucrose, and saline solutions, have proved to be very effective in the control of the cerebral edema. One might choose this procedure in preference to that of spinal drainage or use it in conjunction with spinal drainage. I prefer to use limitation of fluid with spinal drainage and resort to active dehydration when the other measures are inadequate. I prefer to use decompressions as a measure of last resort to control increasing intracranial pressure, and then to combine this with exploraton to rule out frank intracerebral hemorrhage.

In this same discussion Sachs,[5] an equally well-known neuro-surgeon expresses his opinion as follows:

> I also feel that the replacing of operative procedures by other methods, that is, the method of withdrawing fluid from the brain, has reduced our mortality very considerably. It so happens that within the last week my associate, Dr. Furlow, presented a paper on the treatment of acute in-

juries before the St. Louis Medical Society, and he pointed out that in a group of cases that we formerly decompressed, our mortality has been greatly decreased since we stopped this and used the dehydration method of treatment.

I have always differed with Dr. Adson on one point, I am not as sanguine as he is about the use of spinal puncture. I have seen a number of deaths from spinal puncture, some immediate and some coming on within a few hours after spinal puncture and the withdrawal of spinal fluid, and as the two methods, lumbar puncture and dehydration, are aimed to accomplish the same thing, I personally prefer to use the dehydration method.

As a diagnostic procedure, examination of the spinal fluid yields considerable information. Using a water manometer the spinal fluid pressure is determined and a fair estimate of intracranial tension can be judged. The removal of bloody fluid frequently helps because the presence of blood lowers the rate of absorption of excess spinal fluid. I believe that spinal puncture is of material help in the presence of meningitis. While it may not alter the course of the disease, the patient is made more comfortable so far as pain is concerned, and headaches are invariably relieved. Spinal puncture in head injuries, to my mind, should be reserved for the patient who is not doing well—the one whose symptoms are not relieved by other measures and in whom the progress of the injury seems to be against the patient. Spinal drainage is never indicated where there is evidence of medullary disturbance. Localized subdural clot, extradural hemorrhage or intracerebral hemorrhage are never helped by lumbar puncture, and, if done without extreme caution, it may cause a rapid alteration in pressure which may prove fatal.

This may be said about spinal puncture; it is not an indefinite procedure to be undertaken casually by the attending physician. It may be productive of much harm even in the hands of the experienced. The same relief may be obtained in most instances by producing dehydration by means of limitation of fluids and the introduction of hypertonic solutions. This may be carried out in any small institution even by those not wholly experienced in surgical technic, and certainly without the possible danger accompanying spinal drainage.

Operative interference in head injuries deserves particular study inasmuch as its field today is definitely established. Depressed fractures are, and always were, an indication for surgery. The depression in and of itself does not produce or maintain shock. Therefore, a patient is never operated on for a depressed fracture while in the state of shock. The surgeon can choose his own time to elevate the depression. Hemorrhage of the meningeal artery is another indication for surgery. Mortality in this condition is as high as 90 per cent when not operated upon and around 23 per cent if operated upon early. Recognition of hemorrhage of the meningeal artery with subsequent surgical interference is a great life-saving measure. The most important symptoms of intracranial hemorrhage are the regaining of consciousness following the primary unconsciousness, followed by a lapse into a deep coma with the other signs of compression, slowing of the pulse and increasing systolic blood pressure.

If these symptoms go unrecognized, the pulse will change from a slow to a very rapid one with a decided drop in blood pressure and death may ensue.

Decompression operations for relief of intracranial pressure are practically obsolete. There is nothing to be gained by such operative procedure that dehydration will not do far better. The difference in the risk of the two speaks for itself for the measure to be adopted.

I have purposely saved until last the most important therapeutic measure in the treatment of the average head injury, namely *rest*—rest, both physical and mental. Just how long a time it is necessary for these patients to remain in bed depends on the severity of craniocerebral injury. It may be four weeks or many months. It has been repeatedly observed that those patients who have head injuries and also another fractured bone, such as the femur, and who are forced to remain in bed because of causes other than the head injury, make the most nearly complete recovery and have less future disability. Rest in bed offers the best insurance against posttraumatic weakness, headache, and dizziness.

As a diagnostic procedure, the x-ray naturally offers positive evidence of a skull fracture when it can be demonstrated. Stereoscopic roentgenograms are indispensable. The x-ray does not always demonstrate a basilar fracture even when we know it is present as evidenced by hemorrhage or spinal fluid drainage. We should never lose sight of the fact that the knowledge gained from an x-ray picture does not compensate for the injury we may do to a patient in shock by transporting him distances for x-ray examination or moving him about in different positions in order to secure these roentgenograms. The indications for treatment are the existing brain injury, not the determination of the presence and nature of the injury. Neither the eagerness of the patient's relatives to know the exact nature of the injury, or the physician's desire to make an early diagnosis, justifies the moving, manipulation and changes of position necessary to secure adequate x-ray pictures.

Referring again to the frequency of head injuries in all communities and no doctor being exempt from this type of practice, it is well to appreciate the fact that the first dressing in compound skull fractures, as cared for by the average physician, may be more important than the greatest skill of the brain surgeon on the succeeding day. Aseptic technic is paramount and meddlesome "tinkering" with fluids from the nose and ear may be the cause of subsequent meningitis. It is to be remembered that *people with septic meningitis die.*

In considering the sequelae of head injuries, it is interesting to note that the disability claimed from injuries in the field of sport is far less than in industry or compensable accidents. In sports of a strenuous nature, being knocked unconscious is considered in most cases merely incidental to the game and the injured player, more frequently than not, returns to the game after his mind has cleared. In the other case of a similar force producing unconsciousness in industry or accident, the resulting disability may be weeks or months.

May I finally emphasize the necessity for complete physical examination of every accident case. Shock and unconsciousness is not alone confined to head traumatism. A ruptured spleen, bladder, kidney or liver may be the seat of injury and a head laceration merely secondary.

It would not be amiss in this discussion to mention the work of Glaser and Blaine[6] in demonstrating the duration of fractures and operative defects of the skull. Their conclusions as demonstrated by roentgenograms follow:

1. Linear fractures in children under six years of age disappear within six to twelve months after injury.

2. In the minority of cases, linear fractures in adults begin to fade from six to nine months after injury and disappear in from twelve to eighteen months.

3. In depressed fractures without elevation, the fragments become rounded and unite, and the line of fracture cannot be detected though the depression is apparent.

4. In operative defects, wherein the bone has been removed, or in cases of depressed fracture, wherein the fragments have been removed, the cranial defect never becomes smaller, the only change being a rounding of the edges.

5. Bone flaps may either undergo absorption or appear normal.

6. Bone grafts properly placed form a definite covering over the defect.

7. In medicolegal cases of old and recent injury the approximate age of the existing line may be determined.

8. The status of the questionable fracture lines may be determined by their fading and disappearance.

9. X-ray films taken from six months after injury in children to nine months after injury in adults are as valuable as those taken immediately after injury in determining the presence or absence of fracture.

Two other methods of visualization of the cranial contents are in use today—encephalography and ventriculography. Their use may be indicated in demonstrating causes for the late sequelae of head injuries. Encephalography is never indicated in high intracranial pressure. Ventriculography may be done in the presence of increased intracranial pressure. Needless to say these two procedures require skill and practice in their performance.

Whether the physician desires it or not, he is constantly subject to attendance upon head injuries. A knowledge of a few pertinent facts relative to diagnosis and treatment may be the means of saving a victim's life. I have attempted to discuss the management of these cases from a practical viewpoint.

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Fractures of the Spine*

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Fractures of the spine are always serious because of the probability of injury to the spinal cord. The most common type is compression fracture of the bodies of one or more vertebrae. Usually a single vertebra is involved although occasionally the superior surface of one body and the lower surface of the one above will show compression. In such a case the intervertebral disk also is compressed.

Fractures not involving the body, but only the spinous or transverse process, are not so serious. It is true that they are disabling and painful, but inasmuch as no injury of the cord occurs in this type of fracture, the ultimate result will usually be satisfactory and the treatment is comparatively simple.

In the more severe types of compression fracture, there occasionally will occur in addition to the fracture, a dislocation of the vertebra. The articular facets are completely disengaged, the body of the uppermost vertebra being dislocated forward. This, of course, means that the cord will be seriously injured not only on account of the trauma which occurs in connection with the fracture but also because the dislocation may almost completely sever it.

Recently I saw an unusual case in which the odontoid process of the axis was fractured. Fortunately, there was no cord injury and the patient made a good recovery. The treatment for this condition is traction, first by use of the jury mast with the head of the bed slightly elevated, and later on the application of a leather or plaster collar to maintain traction and fixation.

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Compression fracture of the body usually occurs as the result of indirect violence. That is to say, the spine is bent forcefully in the flexed position. Therefore, the compression fractures usually occur at the point of greatest flexion, which is from the tenth thoracic to the first lumbar. Often these fractures occur as the result of extreme violence such as may occur in an automobile accident or where a heavy object falls on the shoulders when one is in a sitting position. We see this type of fracture frequently in coal mines. A rock from the roof of the mine becomes dislodged and falls on the miner's shoulders while he is in a sitting position. This will double up the spine violently and will result in crushing of the bodies of one or more vertebrae and not infrequently dislocation.

Direct violence to the spine will not, as a rule, result in fracture of the bodies of the vertebrae but is more apt to result in fracture of the spinous or transverse process. Other portions of the vertebra seem to escape fractures usually.

The diagnosis is not difficult if an x-ray picture is made, which, by the way, should always be done. Fractures of the bodies and spinous processes are best seen by lateral pictures. Fractures of the transverse processes are detected by anteroposterior pictures.

Symptoms of compression fractures of the spine vary and are not always in proportion to the extent of the fracture but always to the extent of the injury to the cord. Occasionally what appears to be only a slight amount of compression will result in severe damage to the cord. In other cases, where the fracture appears to be no less serious, the cord may escape injury.

However, in practically all severe cases of compression fracture, the cord is damaged and immediate symptoms of paralysis develop. The damage may be due to laceration of the cord and its membranes or, if no laceration occurs, hemorrhage in the cord as the result of the severe stretching or, if there is considerable misplacement, to compression of the cord.

The paralysis is extensive, extending from a few inches below the level of the fracture to the lower extremities. There is loss of sensation and of motion. Nutrition is seriously impaired so that if the patient survives the injury, he is practically sure to develop bed sores in the region of the sacrum, the trochanters, and the heels. The bladder becomes infected and it becomes necessary to irrigate the bladder frequently in the course of whatever treatment may be instituted.

Cases of fracture with paralysis always become a serious problem. Recovery seldom takes place except in those instances where the cord is not seriously damaged. In the cervical spine dislocation is fairly common, often without accompanying fracture. There may be a dislocation without the production of paralysis, and the patient make a good recovery even if the dislocation is not reduced. However, where dislocation of the cervical region is recognized immediately—within a few days after injury—reduction may be made by traction.

Although fractures sometimes occur in the lower lumbar region of the spine, such fractures are not by any means as frequent as in the lower thoracic and upper lumbar regions.

After a diagnosis has been made, the next matter for consideration is treatment. Fractures of the spine with paralysis may not be treated with the simple procedures often followed in fractures elsewhere. For example, it would appear that the proper treatment for compression fracture with paralysis might be immediate reduction of the deformity followed by support to maintain the spine in normal position by the use of plaster cast or stiff jacket. Such treatment is not well borne because of the fact that the body below the fracture is so poorly nourished that pressure sores will develop in a very short time.

The form of treatment we have used for some time and found most satisfactory is to place the patient immediately in bed. A board is placed under the mattress across the bed so that the bed will not sag. A soft pillow is then placed immediately beneath the fractured area so that the spine is maintained in a slightly hyperextended position. If sufficient recovery takes place after several weeks, and there is a return of sensation, then a support like a stiff leather jacket or a light plaster cast may be used.

The next matter to receive serious consideration is the prevention of bed sores, and their treatment if they develop in spite of all our efforts to prevent them. An air cushion or ring should be placed under the sacrum so that pressure is removed from that area as much as possible. The parts should be kept perfectly clean with soap and water and the skin rubbed with alcohol. The same treatment applies to the area over the trochanters and heels. If bed sores do develop, it often takes many months for them to heal. The dead tissues will slough out after a time. The most satisfactory application we have found for bed sores is balsam of Peru and castor oil. The dressings will need to be changed frequently. Bed sores may finally heal even though considerable paralysis may remain.

We have never found it advisable to operate on recent cases of fracture of the spine. The only operation that might be indicated is laminectomy for the purpose of removing pressure from the cord. I doubt whether this operation is ever justified immediately following fracture. However, it has been used with some success in cases of several months standing where the fracture has healed but the spine is not in normal position and the cord is compressed. We have performed this operation a great many times and in perhaps 25 per cent of the cases there has been some improvement. The operation is not difficult and if the patient has made considerable recovery spontaneously, it is, I think, a justifiable procedure.

Fractures of the spinous and transverse processes are usually not difficult to treat. Any support which prevents motion of the spine while the fracture is healing will be sufficient. Fractures of the transverse processes occur usually only in the lumbar region. Usually a stiff leather jacket or possibly strapping the trunk thoroughly with adhesive tape may be sufficient. Fractures of the spinous processes are treated in a similar way. There is usually little displacement in this type of fracture and healing occurs readily. The object of fixation is chiefly to prevent pain.

The general outlook for fractures of the spine where the cord is seriously involved is not good. Many of these cases die within a short time, or may live for a year or two. Death eventually takes place from infection. Infection occurs in the bladder and may extend up to the kidneys. The bowels are sluggish and elimination from that standpoint is poor. Infection always occurs in the areas where there are bed sores.

For old cases in which the patients are about in wheel chairs or walk with crutches, six months or several years after fracture has occurred, considerable benefit may be secured by osteopathic manipulative treatment. In our experience, best results have been secured by the use of traction. These patients are placed face down on the treatment table and the spine carefully relaxed and stretched. A traction attachment may be used in stretching the spine carefully.

This treatment will usually result in considerable additional improvement and may be kept up for several years, the patient receiving treatment perhaps once a week. I have known patients to recover control of the sphincters where there had been no control for several years where this method was used.

Fractures of the Pelvis

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Fractures of the pelvis, which before the day of the automobile were rare, are now relatively common. In any patient who complains of discomfort in the lower abdomen around the hips or pelvis, and who has been in a serious automobile accident or has been violently struck or thrown, pelvic fracture should be suspected. Individuals have been known to walk for short distances with some fractures of the pelvis so that a history of walking after the injury is no proof that fracture does not exist.

Because of the fact that almost any physician at any time may be called upon to attend such a patient, every physician should be familiar with the proper procedures to employ in the handling of such cases.

The majority of uncomplicated pelvic fractures are simple to treat and the results obtained uniformly good, if the principles involved in their care are recognized and carefully employed.

The following questions and facts concerning pelvic fractures should be remembered:

(1) Is the pelvic fracture complicated by bladder and urethral injuries?

(2) Pelvic fractures are more often multiple than single.

(3) Patients with pelvic fractures not infrequently suffer from other serious injuries either to other parts of the skeleton or to the viscera.

(4) Treatment of pelvic fractures, as of other fractures, should begin at the scene of accident, if possible.

(5) In pelvic fractures perfect bony alignment of the fragments is not essential for a good functional result in the majority of cases.

Care at the scene of the accident for fractures of the spine, skull and pelvis is much the same.

(1) The patient should be placed on a stretcher that does not sag. An improvised one made with boards is better than one that may permit further displacement of the fragments or cause an increased injury to the viscera or adjacent structures. The patient should be placed on this conveyance with sufficient deliberation and care so as to cause the least pain and to prevent movement of the injured parts as much as possible.

(2) He should then be moved indoors, preferably to a hospital if one is available, not to the home or the police station or to a doctor's office. Each handling of the patient increases the danger of making the injury more serious.

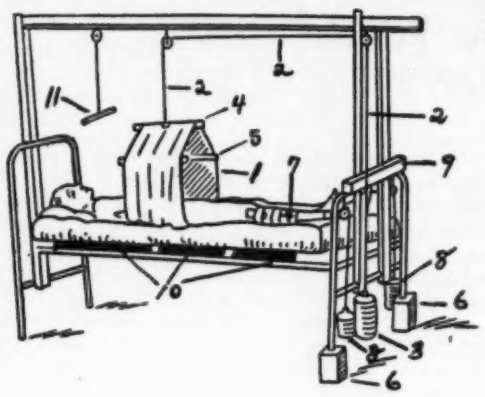
(3) Immediately upon admission to the hospital a careful physical examination should be made without handling or moving the patient any more than is essential. Ripping or cutting the clothes is usually necessary. The first thing to determine is whether or not the patient is in shock, and if so to what degree. If the patient is in shock, appropriate measures for combating this should be instituted at once before any exhaustive examination is made. If the patient is not in too severe a state of shock, x-ray investigation should be undertaken with a minimum of handling or turning of the patient. X-ray views should be taken from different angles, changing the position of the x-ray tube or taking stereoscopic pictures rather than changing the position of the patient. If a fracture of the pelvis is demonstrated, an investigation of the bladder and urethra for possible damage is next in order. The most frequent visceral injury and one that should always be looked for is a rupture of the bladder or urethra. If the patient can urinate and the urine does not contain blood, the probability is that the bladder and urethra are intact. If patient cannot void, he should be catheterized. If no urine is obtained or if blood shows in the urine, the location and extent of the bladder or urethral injury should be determined with the greatest possible care. It is safer to leave the catheter in place and wait for a few hours if necessary, rather than to inject a measured amount of sterile water into the bladder and then see whether a like amount can be withdrawn. If but little or no urine appears, and there is additional evidence of intraperitoneal invasion, the diagnosis of intraperitoneal rupture of the bladder is apparent and less damage is done. In subperitoneal rupture of the bladder there is usually more blood in the urine, an absence of increasing peritoneal symptoms and the additional evidence of urinary extravasation. If the bladder is ruptured intraperitoneally, the peritoneal cavity should be opened and the bladder opening closed. With extraperitoneal rupture, the bladder had best be exposed extraperitoneally and sutured, if possible, and continuous urethral drainage with a urethral catheter employed, with as complete drainage as possible of the subvesical space.

If the urethra is ruptured, there will be hemorrhage from the urethra and difficulty will be encountered, or it will be impossible to pass a catheter through the urethra. Suprapubic drainage in these cases should be established at once.

It must be remembered that many of these patients will have considerable hemorrhage around the site of fracture, which may produce swelling, discoloration, and pain which may be abdominal in character and be associated with abdominal rigidity. This would suggest possible bladder rupture, but it is wise to wait until definite evidence of bladder rupture is obtained before surgical investigation of the bladder is undertaken, for if surgical interference is attempted a closed fracture is converted into a compound one.

As soon as possible the location and extent of all other possible injuries should be determined. A fractured pelvis may be accompanied by some other break in the skeletal system or damage may have been done to other viscera than the bladder, such as a rupture of the liver, spleen, or kidney.

The direct treatment of the fractured pelvis is relatively simple. Supporting the patient in a canvas sling extending from the lower dorsal to midway of the thighs will immobilize the pelvis and greatly



Illustrating fracture bed and Balkan frame with hammock used in the treatment of fractures of the pelvis; (1) canvas suspension hammock, (2) cord attached to weight, (3) weight of about 25 to 30 pounds, (4) wooden bar 2 inches square and length of hammock to which is attached cord for weight, (5) wooden spreader made width of patient and length of hammock—the spreader is about ¾-inch thick and 1½ inches wide, (6) blocks to elevate bed 10 to 12 inches, (7) adhesive strapping to leg to which is attached weight of 4 to 6 pounds to maintain abduction of leg and traction, (8) weights for abduction and traction of legs, (9) wooden bar for attachment of pulleys for leg traction, (10) wooden boards under mattress to prevent sagging of bed, (11) bar to allow patient to lift himself in bed.

The hammock or sling with the leg traction and abduction should be applied and adjusted so as to exert a positive definite effect upon the fracture under treatment and not a mere passive, inactive sling. Misapplied it might even increase the fragment malalignment.

facilitate the care of the patient. It should be counterbalanced with just sufficient weight to nearly counterbalance the patient's weight without lifting him off the bed. In addition to this, traction on the thighs and legs, which are abducted to about a 15 to 20 degree angle and with about 5 to 10 pounds weight on each, depending upon the size and strength of the individual, will overcome the contracture of the abductor muscles of the thighs and prevent the limited abduction which might otherwise occur following a pelvic fracture. One leg may require more weight than the other and the angle of abduction may need to be greater on one side than on the other, depending upon the fracture and upon the degree of overriding of the fragments.

Usually a spreader to keep the sides of the canvas sling or hammock apart is necessary, its width depending upon the width of the patient's pelvis. If there is a fracture of the pubis with lateral separation, the spreader should be narrower than the lateral overall dimensions of the pelvis so as to overcome this separation. In all other fractures of the pelvic region, without the use of the spreader, the lateral compression of the canvas sling might cause an overriding of the fractured ends.

Six weeks is usually the minimum for the use of the hammock. If x-ray examination shows satisfactory union, then the hammock is dispensed with and the patient, after confinement in bed with a pelvic belt for another week or two, is allowed out of bed on crutches. However, the amount of weight-bearing permitted should be determined by the amount of callus which is demonstrated by repeated x-ray examination.

The patient should not be allowed to use his full weight or return to work too soon; not before firm union is definitely established. Though the time necessary for this varies with each case, it is usually from four to six months.

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Fractures of the Neck of the Femur*

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Fracture of the neck of the femur is one of the most serious of all fractures involving joints. The mortality rate is high and the percentage of poor results is excessive. These fractures may occur at any age, but are more frequent in the later decades of life. The age period of greatest incidence is between fifty and sixty years. Patients with intertrochanteric fractures average five to ten years older than those with fractures through the narrow part of the neck.

An important point brought out by Moore regarding the healing of fractures of the hip is as follows: "Healing of these fractures is governed by the rule of hyperemic decalcification and ischemic recalcification." When the fractures are imperfectly mobilized, the trauma of motion gives rise to increased and continued hyperemic decalcification with absorption of the neck and nonunion. In subcapital fractures with nonunion, the neck is absorbed because the main source of blood supply comes from the distal fragments and ischemic recalcification takes place there. The head in such fractures may be almost entirely avascular. There is no absorption in the calcium content and it shows upon x-ray films as a dense, hard sequestrum as compared with the surrounding osteoporotic bone. When it is possible to reduce the fragments accurately and to maintain perfectly this accurate reduction, there is no physiological reason why union could not be expected in fractures of this region as well as in other parts of the body of any given patient.

Statistics show that approximately 25 per cent of the patients with fracture of the hip joint die and of the remaining cases only about 50 per cent secure good bony union. This appalling situation creates a challenge to try to improve the treatment that has been used in the past. The best way to treat the patient is to treat the fracture. As soon as the fracture is actually immobilized, pain is relieved and the patient has a much better chance to recover.

There are various classifications to be found in literature, all of which add to the confusion. As a matter of fact, there are only two great divisions for fractures of the hip—fractures through the neck of the femur and fractures through the intertrochanteric region. (Fig. 1.) Fractures through the neck are always intracapsular. Fractures through the base of the neck may be partially intracapsular and partially extracapsular. Intertrochanteric fractures are mainly extracapsular, although a line of fracture may extend into the hip joint. Subcapital, transverse, cervical, oblique cervical, intracapsular, basilar, adduction, and abduction fractures are subdivisions of fractures of the femoral neck.

Fractures of the upper end of the shaft, peritrochanteric, intertrochanteric, transtrochanteric, and extracapsular fractures are subdivisions of intertrochanteric fractures.

Diagnosis of Fractures of the Upper End of the Femur.—This injury is so frequent in aged people

*Delivered before the Surgical Section at the Forty-First Annual Convention of the American Osteopathic Association at Chicago, July, 1937.

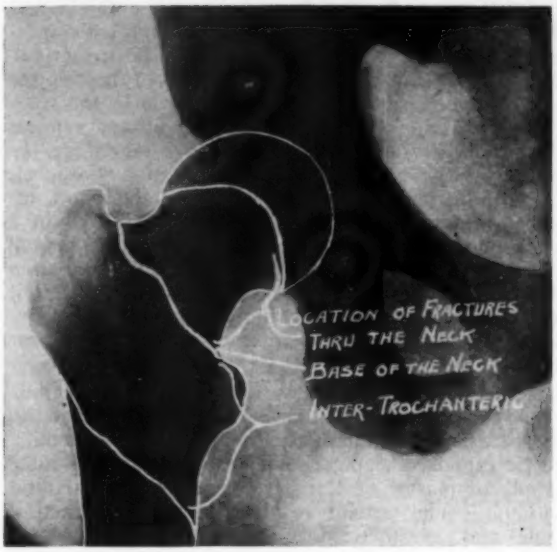

FIG. 1

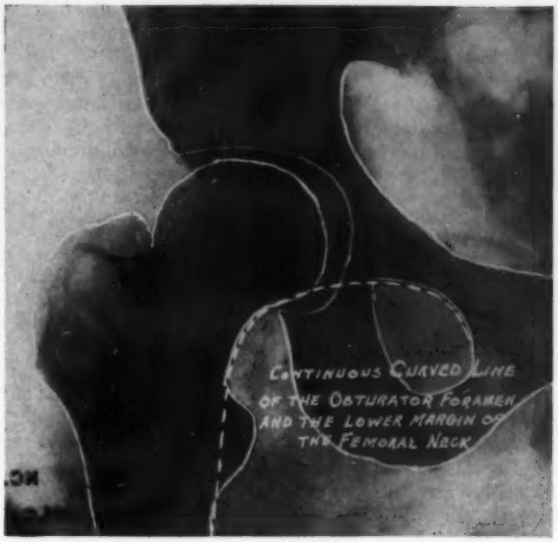

FIG. 2

that if an elderly person falls to the ground and is unable to rise and walk again, it may be assumed, until proved otherwise, that he has a fracture of the neck of the femur. The classical symptoms are pain and disability at the hip, swelling over the joint, and some shortening and eversion of the limb. In older persons the posture and appearance are characteristic and often a diagnosis of fracture of the hip can be made at a glance. The patient lies upon his back with the injured limb in the position of external rotation and slight abduction, and the appearance is that of a flaccid paralysis of the extremity. As a rule the patient is unable to support his weight in the limb or to lift his heel on the injured side from the bed. However, many patients by contraction of the hamstrings and flexion of the knee are able slowly to slide the foot upward and raise the knee from the bed. Very rarely in complete or firmly impacted fracture the patient can raise the heel from the bed or even walk on the extremity. The absence of complete disability in the hip, therefore, does not rule out the possibility of fracture.

Shortening of the leg is one of the most important diagnostic signs and can be measured accurately and recorded at the first examination. The amount of elevation of the trochanter is measured by drawing a line from the anterior superior spine to the spine of the ischium and constructing Bryant's triangle. The amount of elevation of the trochanter is equal to the shortening of the base of Bryant's triangle. The line from the anterior superior spine of the ilium to the spine of the ischium is known as Nelaton's line. The uppermost portion of the trochanter reaches Nelaton's line in the normal hip.

Impaction in Fractures of the Upper End of the Femur.—Although there are still many competent surgeons who believe in leaving impacted fractures alone and immobilizing the hip in the position of deformity, the present-day treatment is not much concerned with the question whether or not impaction is present. Many fractures of the hip, however, which seem to be impacted are merely *entangled.* This is especially true in fractures through the neck. As a general rule it is much easier to prove that a fracture is not impacted rather than to prove that it is. Most of the signs of impacted fractures that are accepted as indicating impaction are not reliable, and it is practically impossible by physical examination or x-ray to determine whether or not the fracture is impacted.

The most reliable signs of impaction are permanent eversion and permanent shortening, but these signs are not infallible. *If there be a definite shortening and this is not decreased by slow steady traction with the force of about twenty-five pounds exerted over a period of two minutes, the fragments are probably impacted.* However, the surgeon is fairly safe in assuming that a fracture through the neck of the femur is not impacted.

X-ray of the Hip in Fractures—Since it is impossible, because of the deep-seated location of the hip joint, to tell much by palpation, it is very important that we determine as much as possible by taking x-ray pictures what we are dealing with before we give a prognosis or start the treatment in a case of hip injury with pain and disability. It is an accepted, or rather established, practice in taking a picture of the hip to make a stereoscopic picture of the pelvis including both hips, followed by lateral x-ray pictures, so that we have views in two planes, from which we get the true relation of the fragments.

For the first x-ray examination it is best to use a 14 by 17 inch film with the patient on a Bucky diaphragm in order to show the necks of the femurs of both legs, that one may have a comparison between the good and the bad leg.

In the normal patient there is a continuous line of the obturator foramen and the lower margin of the neck of the femur. (Fig. 2.) If there is external rotation, the lesser trochanter shows prominently and the greater trochanter vanishes behind the neck. Should there be internal rotation, the lesser trochanter vanishes behind the shaft and the greater trochanter assumes a prominent position. In the event of an

intracapsular fracture of the neck, external rotation produces prominence of the lesser trochanter, elevation of the greater trochanter, and a loss of the fused continuity of the curved line of the femoral neck and the obturator foramen. Although an anteroposterior view of the neck of the femur might show good approximation, there can be poor alignment if viewed laterally. *It is essential, therefore, that in all fractures of the neck of the femur lateral pictures be made of the neck.*

Lateral views of the neck of the femur can be obtained in three different ways, but unless a portable x-ray apparatus is available, it is necessary oftentimes to dispense with such pictures. When using a shock-proof unit, it is possible to put the tube between the thighs, placing the film against the side of the patient's leg just above the great trochanter and at right angles with the top of the table. If the portable unit is not shock-proof the position of the x-ray tube and the plates may be reversed by placing the film between the patient's thighs and shooting the picture through from the opposite direction. The other method of taking lateral views of the neck of the femur can be used only in instances where the fragments have been approximated with nails. In that event the thigh is flexed on the body at right angles with it and slightly abducted. With the film beneath the patient's hip flat on the table the picture is taken directly through anteroposteriorly, which gives a perfect lateral view of the neck of the femur. Because very few if any of us in the past have made lateral x-ray pictures of the neck of the femur, it is entirely possible that many of our cases of nonunion have been due to the fact that a proper approximation was not obtained even though our anteroposterior views showed good alignment and proper reduction of the fracture.

TREATMENT

The treatment of intertrochanteric fractures needs no special attention since the large majority of them heal irrespective of the type of treatment used. The method used to obtain the greatest number of satisfactory results in fractures of the neck can be utilized for the treatment of intertrochanteric fractures. Since good function is obtained in only 40 to 50 per cent of the cases of fracture of the neck, the problem has not been solved as to which of the present methods is most efficient. At the present time there are several ways in which fractures of the neck of the femur are being treated: (1) Abduction method of Whitman, including Leadbetter's method of reduction. (2) Roger Anderson well-leg splint. (3) Artificial impaction method of Cotton. (4) The operative nailing of the fragments as advocated by Smith-Petersen and Moore. All methods aim at securing accurate reduction and absolute immobilization of the fracture.

The abduction method of Whitman is probably the best known routine. The abduction method is based upon the assumption, first, that fracture through the neck of the femur is accurately reduced and, second, that immobilization of the extremity in a position of full abduction with slight internal rotation and extension jams the fractured surfaces together and maintains immobilization. That this is obviously true is explained by abduction and internal rotation. The stump of the neck is swung inward towards the acetabulum on the "y" ligament and the fascia and the capsule of the hip tightened around both fragments. If this abduction method is to be successful, the fracture must be definitely reduced before the cast is applied, since abduction literally locks the fragments in whatever position they may lie and renders further reduction impossible. *Failure to reduce the fracture accounts for many of the nonunions,* although the hip has been forced into abduction, internal rotation, and extension and immobilized in a large plaster spica. It is probably true that not all fractures of the neck of the femur will unite even if properly reduced and immobilized in abduction, but it is the opinion of most authorities that it is the improper reduction of the fracture that accounts for many of the failures.

Reduction of the Fracture, Technic—The surgeon should have three or four assistants and an anesthetist. He should have a fracture table with a pelvic support like the Hawley table and an adequate supply of plaster of Paris bandages, felt, and cotton padding. The patient is placed upon the fracture table and anesthetized. There are two accepted methods of manipulation for reduction of fracture of the neck of the femur—Whitman and Leadbetter. In performing these manipulations, the surgeon must realize that he is endeavoring to fit the end of the neck fragment against the end of the head fragment, which lies loose in the acetabulum, and that the distal or neck fragment is displaced backward by gravity and upward by muscle pull and is directed anteriorly, that is, externally rotated, by gravity.

Whitman's Manipulation—(1) By manual traction the injured extremity is pulled down until it is the same length as its fellow, thus reducing the upper displacement. During the traction, the opposite leg is pulled on by an assistant to immobilize the pelvis. (2) The upper thigh is lifted to a level of the sound thigh to reduce the posterior displacement. This is a point that is often neglected and should be done by the surgeon himself as it is very important. The upper thigh should be not only lifted, but also pulled laterally to enable the distal fragment to clear the proximal one. (3) The limb is slowly rotated inward to a point slightly beyond the neutral position. (4) Both limbs are slowly abducted to the limit permitted. Traction sufficient to maintain full length of the limb is maintained throughout the procedure until the fragments are locked by abduction, when the traction may be discontinued and the hip merely supported in abduction, maintaining the internal rotation while the cast is applied.

Leadbetter's Method—(1) The pelvis is fixed by an assistant and under moderate traction the knee is slowly flexed to 90 degrees to relax the capsule and muscles. Then the slightly abducted thigh is lifted directly upward to correct the posterior displacement and shortening and is generally rotated inward 45 degrees to engage the fragments. During this procedure, it is sometimes helpful to have an assistant pull the upper thigh directly outward and thus clear the inner fragment. (2) When the fragments are felt to engage, the hip should be circumducted into abduction and extension and the opposite side abducted.

Moore's Method, a Modification of the Leadbetter Method—In this instance the hip is flexed at right angles, the knee bent, and pull exerted directly

upward; an assistant may help by putting his hand under the greater trochanter and pushing upward, but usually there is no difficulty experienced. Shortening has been corrected by this maneuver. While the assistant continues to give support by lifting upward under the greater trochanter and while the fractured surfaces are facing each other, the limb is turned into internal rotation and carried down into complete extension and abduction. Internal rotation brings the fractured surfaces closely together. Extension and abduction locks the fracture securely so that no further traction is necessary. The assistant sits on a stool, supports the limb, and holds it steady in this position. It is doubtful that the folding of the capsule between the fragments can occur, and movements of circumduction for the purpose of reducing such engagements are probably unnecessary after any of these manipulations. Leadbetter's palm test, as described later, is used to confirm reduction and the manipulations may be repeated if there be any uncertainty.

The *Tests of Reduction.*—A fracture of the hip reduced by any of the above methods should fulfill the following requirements: (1) Full abduction equal to that on the sound side can be obtained and maintained without undue force. (2) In a position of full abduction the hip should be stable as to length; that is, no traction should be necessary to prevent the distal fragments from slipping upward (shortening). (3) In a position of full abduction the hip should be stable as to rotation; that is, no force should be necessary to prevent the extremity from rolling outward. The Leadbetter palm test is proof of these factors. After successful reduction, the position of the abducted hip can be maintained by supporting the heel in the palm of the hand. The plaster cast should not be applied until reduction is believed to be successful and meets the Leadbetter palm test. Further confirmation of the reduction should be made by x-ray examination. An anteroposterior view of the hip should be made as well as a lateral view. *The fracture must be reduced in both planes before a plaster cast is applied.*

Whitman Abduction Method—(Fig. 3) Application of the cast: With the patient supported on the pelvic rest and pulled down snugly against the perineal post, the legs are held by assistants. Both legs are in a position of full abduction and slight extension, and the leg on the injured side is rotated slightly inward. Some surgeons flex the knee about 45 degrees in order to be sure of maintaining internal rotation. Occasionally, this position causes difficulty later in restoring full extension to the knee after long periods of immobilization. *Wide plaster bandages, twelve inches or more, greatly lessen the amount of labor involved in applying the large plaster spica.* Either the single spica or a double spica may be used. Either type affords effective immobilization if it is properly applied. When using the single spica of Whitman, it is necessary that a large spica jacket be applied. The plaster jacket must fit snugly around the pelvis and extend up to the armpits. This oftentimes necessitates support of the back with a metal strip extending from the pelvic rest to the head of the table. This can be pulled out after the plaster has set. It must be remembered that a single spica which includes only the lower ribs should not be used as it does not immobilize the hip; whereas, in a double spica, the jacket part may be stopped at the lower third of the chest and the plaster extended down the good leg on the lower extremity to the junction of the middle and lower thirds of the leg. Some surgeons place a wooden bar between the legs just below the knee in order to strengthen the cast and facilitate turning the patient. In order to avoid hypostatic congestion of the lungs, the patient must be turned on his face twice a day and should lie on the face for a period of two or three hours after each turning. The patient should be placed on a bed with boards running lengthwise; otherwise, the mattress will sag and throw an added strain on the cast. A frame should be placed over the bed, a bar suspended from this so that the patient can take hold of it and lift himself to change position and to get on or off the bedpan. The bed should be kept clean and dry to avoid pressure sores and softening of the cast. When using a single spica, the patient may be propped up in bed by letting the leg on the affected side hang over the side of the bed or he may be removed to a chair daily. But this involves a lot of effort, and turning twice daily is all that is necessary to safeguard the general health of the patient.

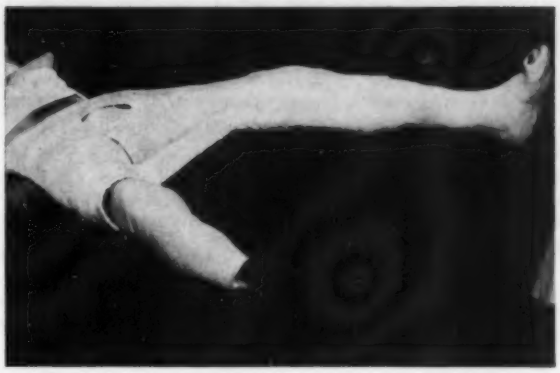

Fig. 3.—Cast used in Whitman abduction treatment of fractures of the neck of the femur. Note internal rotation and abduction with slight flexion of hip and knee. The cross bar strengthens the cast and permits easier turning of the patient. We use a short spica to the knee on the uninvolved side so that it is not necessary to carry the cast high on the thorax and the pelvis is absolutely fixed, preventing adduction deformity in the cast. These are left on for a minimum of twelve weeks.

After the plaster is dry, x-ray pictures must be taken anteroposteriorly and laterally to check the position of the fragments. The cast should remain on for three or four months and should not be changed unless it becomes inefficient. In changing the plaster, the beginning of union may be broken up or the position lost and nonunion result. Should the cast become inefficient, it is best to reinforce it if possible.

At the end of three or four months the plaster should be bivalved and the hip tested for union, clinically and by X-ray. The best test for clinical union is to grasp the heel and leg, alternating traction and upward pressure on the limb while the pelvis is fixed. If the extremities move up and down on the pelvis telescopically, there is no union and further immobilization is useless. If the hip feels solid and does not telescope, union is probably present. If the hip telescopes, the x-ray will probably show marked

absorption of the proximal end of the distal fragment and the case may be treated as a non-union. If the hip is solid and x-ray shows the fragments in good position with little or no absorption, union is probable. The patient is kept recumbent in bed without immobilization for another month. The hip, knee, and foot should be exercised daily. At the end of this time the patient can be gotten up on a Thomas walking caliper splint, which should be worn for from three to nine months or until roentgenograms show firm bony union.

The Artificial Impaction Method of Cotton—The patient is placed on a fracture table with a pelvic rest and a perineal post and anesthetized. By manual traction the leg on the fractured side is pulled down until shortening is corrected and the leg is given to an assistant to maintain the position by traction. The surgeon then places a double thickness of saddler's felt over the trochanter and impacts the fracture by pounding on the trochanter with a heavy wooden mallet while the assistant makes counter pressure on the other side of the pelvis. The strokes should be slow following-through blows, and when impaction occurs something is felt to give in the hip. The impaction should be tested by the loss of normal mobility of the leg when released and by the fact that shortening does not tend to recur and the hip no longer telescopes with intermittent traction. After artificial impaction, a large single or double spica should be applied and the hip treated exactly as described under the abduction method. Although Cotton is enthusiastic about his method, in the hands of other men it has not proved any more satisfactory than the Whitman abduction method. Reports seem to indicate that there are just as many cases of nonunion by this method as by the Whitman method.

Roger Anderson Technic and the Use of the Roger Anderson Well-Leg Splint.—This technic differs from that of Whitman in that no attempt is made prior to the application of the splint to do a closed reduction of the fracture after the method of Leadbetter, Moore, or Whitman. The reduction of the hip is supposed to take place after the application of the splint. In this technic a plaster cast is applied to the good leg extending from the mid-portion of the thigh down to and including the foot. A part of the metal splint is incorporated into the cast on the good leg. A pin is passed through the lower end of the tibia on the side of the fracture and incorporated in a cast which extends from the upper margin of the fibula down to and including the foot on that side. The remaining portion of the metal splint is incorporated into the cast on this side. The metal portion of the braces on the good leg, as well as that on the bad leg, are connected with the remainder of the splint and traction is made against the good leg, which automatically tilts the pelvis and produces abduction. The splint is so designed that internal rotation of the foot is possible, thereby conforming to the fundamental principles of the reduction and immobilization of fractures of the neck of the femur —traction, abduction, and internal rotation. This type of splint allows the patient to be turned on his face and prevents hypostatic congestion as well as permitting the patient to sit up in a wheel chair within a day or two following the application of the splint. Our experience with this apparatus is limited to some eight cases in which satisfactory results were obtained. In all of our cases of intertrochanteric fractures good union resulted. Of the remaining number of fractures of the neck of the femur, two died, one had a good result and one nonunion.

Dale Wilson Technic in Treating Fractures of the Neck of the Femur.—For lack of a better name, since it was described by Dr. Dale Wilson, an orthopedic surgeon of Toledo, Ohio, we have chosen to call this the Dale Wilson technic. Dr. Wilson's technic is essentially that of Leadbetter or Whitman for the closed reduction of the fracture of the neck of the femur—traction, internal rotation, and abduction. Prior to the reduction, two booths of plaster of paris extending from the upper end of the fibula down to and including the foot are applied. After reduction has been satisfactorily obtained, both legs are carried to the limit of abduction and a wooden bar approximately one inch square is incorporated into the casts of both feet, maintaining an abduction of both legs and still permitting the patient to move about in the bed and turn frequently. In fact, this technic amounts to what is commonly called the double spica in which the cast is carried to the waistline and abduction of both legs maintained by a separator as in the Jones well-leg splint.

Disadvantages of the Conservative Closed Method.—(1) Some type of anesthesia is necessary. (2) Statistics show a high mortality. (3) A certain number will be miserable and uncomfortable in the immobilization cast or apparatus. (4) Pressure sores may develop. (5) Prolonged immobilization or recumbency predisposes to atrophy of the soft tissues and bone with the possibility of absorption of the femoral head and neck, nonunion or fibrous union, and various degrees of ankylosis in all joints of the extremities with disability resulting even though the fracture heals in good position. (6) Weight-bearing cannot be allowed for fully six months. (7) Prolonged hospitalization, numerous x-ray examinations, and other treatment plus the charge of the physician and special nurses make the treatment very expensive.

Operative Treatment of Fracture Through the Neck of the Femur.—Available statistics indicate at least 20 per cent of the people who suffer fracture of the neck of the femur die prior to the time that the treatment could be effected, which leaves about 80 per cent of the cases of hip fractures upon which the statistics relative to the closed method of treatment are based. Of this 80 per cent one can expect, according to available statistics, good union or at least a serviceable hip in 50 per cent of the cases, or in other words, forty out of every 100 patients who suffer a fracture of the hip can expect union and a usable hip by the closed method. This high mortality and the astounding number of cases with nonunion have caused orthopedic surgeons throughout the country to attempt to develop a method whereby a greater percentage of these people can obtain serviceable hips. A number of operative technics have been devised whereby the fracture can be reduced and immobilized.

(To Be Continued in April)

Committee on Public and Professional Welfare

THOMAS R. THORBURN
Chairman
New York City

KEEPING PACE WITH PUBLIC RELATIONS WORK

Several weeks ago an article appeared in the *New York Times* headed, "Finds 'Propaganda' for China in America—Viscount Konoe, 'Disgusted' by poor showing of Japan, urges public relations counsel."

It went on to say: "Japanese propaganda in the United States has been completely knocked out by Chinese reports."

"What shall we do?" is the question asked. Viscount Konoe says: "Japan must make as great an advance in American filmdom as China has done. We must get hold of a man with a nose for propaganda and let him take charge. The government and all propaganda organs should pause and reflect."

Evidently this suggestion was considered a worth-while one, for about ten days ago I received a booklet sent out by the merchants of one of the Japanese cities. This brochure, neatly illustrated with picturesque views of peaceful Japan and its people, told the story of why the present conflict was due to unrest in China and the Chinese failure to live up to her promises in maintaining peace.

This booklet was mailed from Japan. How many thousands or hundreds of thousands of these were sent all over the United States, I do not know. It is another excellent example of public relations work, done with the guidance of a counselor.

Within the past few days it was stated in the *New York Times* that the British Medical Association is now employing a public relations counselor.

When we consider the ultraconservative attitude English doctors have always had toward publicity or anything that sounded like it, we are astonished at the fact that they have finally awakened. They realize that even if they have been conducting an ethical practice, and even if by their surgery they have been doing things which have appeared from time to time in the public press, yet getting their story before the public is the work of a public relations counselor.

The osteopathic profession has seen the light, and is now conducting a campaign of public relations which it took the British Medical Association hundreds of years to appreciate and adopt.

We know only too well that the American Medical Association has had a well-organized public relations campaign which it has been carrying out for a number of years.

Conservative public relations is not ballyhoo. It is a well-organized effort to place the work and accomplishments of a profession or business before the public in such a manner that they will appreciate its efforts and utilize its facilities.

If there ever was a time when as Emerson is so generally supposed to have said, if a man made a better mousetrap than his neighbors, the world would make a beaten path to his door, that time is past. Modern methods of transportation and communication would bring the inferior mousetrap to everybody's door long before the world would beat a path to the door of the man who made a better mousetrap.

The excellent results obtained in osteopathic practice can be told to the world much more rapidly than the old method of mouth to mouth education and acclaim.

Every osteopathic physician, hospital, institution, and college will be affected by our public relations accomplishments. We cannot afford to lag behind the times and adhere to the old order of things. This is a progressive world, and we must keep pace with its advancement.

T. R. T.

Department of Public Affairs

A. G. CHAPPELL
Chairman
Jacksonville, Fla.

BUREAU OF PUBLIC HEALTH AND EDUCATION

FRANK F. JONES, D.O.
Chairman
Macon, Ga.

LUNCHEON MEETING PLANNED FOR CINCINNATI CONVENTION

On Wednesday noon, July 13, during the Cincinnati A.O.A. Convention, there will be held in a private dining room at the Netherland Plaza Hotel a luncheon meeting to which all publicity chairmen and chairmen of public health committees in the divisional societies are invited.

With the renewed interest in public contact generated by the Committee on Public and Professional Welfare, there will probably be many persons who will desire to attend this luncheon, and here, in making the first announcement, I desire to say that it will be an open meeting—open to any osteopathic physician who is interested in the topics that will be discussed. All that is necessary is that you make your reservation in time so that a place may be prepared for you.

The speakers for this luncheon have not been selected, but announcement of their names will be made within a few weeks.

Last year a dinner for this same group at Chicago was attended by about seventy people and many of them thought that a worth-while spirit was created among those present, so we are looking forward this year to an even larger attendance. In fact, I would be glad to have several hundred practitioners in attendance if space permitted.

This early announcement is made in order that you may include this luncheon engagement on Wednesday, July 13, when you are making up your schedule for the Cincinnati Convention.

Please remember that the program will be over in time for you to attend the Wednesday afternoon features of the convention.

F. F. J.

LEGAL AND LEGISLATIVE

WALTER E. BAILEY
St. Louis
Legislative Adviser in State Affairs

BASIC SCIENCE IN MICHIGAN

The basic science law enacted in Michigan last winter provided for a board of five examiners, no two from the same college, with licensed M.D.'s, D.O.'s, and chiropractors barred. Each of the three groups is entitled to nominate two candidates, and of each two the governor is to name one. The president of the Michigan State Chiropractic Society has written to the governor declining to make recommendations for the appointment. His letter, in part, follows:

"After carefully going over this matter we find that there is no possibility of securing members for this board who are favorable to our profession. During the time this bill was under consideration by the legislature, our representatives continually endeavored to make it possible for the chiropractors to have representation on this board. However, the opposition made this condition impossible and as the law now requires that the members of this examining board be instructors in the basic science subjects (in this state) . . . there is no possible chance for fair representation for us.

"The education and associations of the instructor above described makes it wholly natural that he be pro-medical. There are no educational institutions in this state which are teaching basic science subjects preparatory to chiropractic practice—all of them do teach these subjects preparatory to medical practice. Of course, it is necessary that the board of examiners of the basic science act be medically-minded if the primary purpose of this act is to be carried out, as the basic science laws are designed to suppress all methods of practice except those advocated and sponsored by the

American Medical Association, from whose legislative committee basic science laws originated and which organization has used every conceivable method to force the enactment of these laws.

"As each of the professions included in the basic science act had, and still has, its own board of examiners, this law serves no other purpose than that of eliminating competition for the medical doctors. . . . I sincerely wish that I could comply with your request and submit the names of some fair and unprejudiced candidates for this appointment, but I have been unable to learn of any such who are eligible for this appointment."

TONSILLECTOMY IN MONTANA

The case of osteopathic physicians in Bozeman charged with violation of the medical practice act in connection with tonsillectomy operations, which the lower court undertook to throw out and which the supreme court instructed it to try, resulted in conviction in the lower court.

INTERNSHIP IN NEW HAMPSHIRE

A printed card is distributed by the Board of Registration in Medicine for the State of New Hampshire relating to those applying for license to practice osteopathy in the state. It bears the names of all the members of the board and the signature of the secretary. It reads as follows: "After January 1, 1938, applicants for certificate of the Board must show evidence of not less than twelve months internship in a hospital 'approved for intern training by the American Osteopathic Association'."

VENEREAL DISEASES IN NORTH DAKOTA

The office of the attorney general in North Dakota recently rendered a remarkable opinion to the effect that the signatures of osteopathic physicians were invalid on the certificates of freedom from venereal disease required of male applicants for marriage licenses. This was in direct conflict with an opinion rendered by the same office only about two years previously and when this fact was called to the attention of the attorney general, the later ruling was rescinded. As matters now stand it is the opinion of his office "That duly licensed osteopaths, in referring to themselves, have the right to use the term 'osteopathic physician,' 'osteopathic doctor,' or 'doctor of osteopathy,' but may not use the letters 'M. D.' or the words 'doctor.' 'physician,' or 'surgeon,' alone."

There was another surprise ruling from the same office, to the state board of health, to the effect that it is under no obligation to accept from osteopathic physicians blood samples for examination as to the presence of venereal disease. In view of the law and practice in the state, it is expected that this also will be reversed.

COMMITTEE ON VOCATIONAL GUIDANCE

MARY L. HEIST
Chairman
Kitchener, Ont.

CAN YOU TALK?

In many great sales organizations, the ability to talk intelligently is the primary requirement for a selling position.

Seated before the personnel director, the applicant for such a position is carefully examined as to poise, personal appearance, educational background, and ability to talk. If his qualifications meet with approval, he will be given a thorough schooling in the plant. He will be instructed thoroughly in the manufacture of the product he is to sell; he will be acquainted thoroughly with the various advertising campaigns and mediums; he will be trained in the method of presentation; and before he goes on the field he will know the company's policies as to credit regulations, desired points of distribution, and the territory from which the company expects the greatest returns.

When his factory training has been completed, the representative will be furnished with all the equipment he will need in his work of demonstration, and he will be sent out to be the company's voice.

In his work he will be called upon to make contacts and to convert these contacts into loyal clients. In the process of the conversion he must assume the position of plant superintendent, advertising and sales managers, merchandise and credit managers. In other words, he must be so thoroughly acquainted with the product he represents, the integrity and reliability of the company back of his presentation, that he talks with conviction and his every argument demonstrates his unshakable belief in himself, his house, and its product.

If a man can do that as a mere employee, working for a salary and subject at any time to change of employment through the many vicissitudes of the business world, why cannot the members of the osteopathic profession use the idea of the representative's training and methods to present to the world the great discovery made by Dr. Still.

If that discovery were still in the experimental stage, if there could be any reasonable doubts as to its practicability, its fundamental accuracy, or its service, there could be reasons for not offering it to those who need it. But it has passed all those stages; it has proved itself beneficial in the lives of thousands.

Referring again to the commercial representative, let us compare an osteopathic physician with him. He was chosen because of his poise, balance, and personality. The osteopathic physician was chosen in addition for his preprofessional education. The representative spent four to six weeks studying the manufacture of the product he proposed to sell. The osteopathic physician spends four years in intensive study and training.

In all of the fundamental sciences necessary for the healing art, the osteopathic physician's education and training are equal to, and parallel with those given any physician. But in the new healing art, the osteopathic physician's ability is brought to a degree of efficiency and service far excelling any known branch of the healing art.

With all this great storehouse of education and training at his "finger tips" the osteopathic physician has something to offer that is self-demonstrative and creates a favorable impression at the first contact. He does not have to seek *his* clients—they seek *him* and each visit proves the superiority of the service he has to offer.

What then is the osteopathic physician's duty to his profession and to the world?

First, to be thoroughly sold on himself and on his profession.

Second, to make it a fixed rule of his life never to permit a client (patient) to see in any act of his a lack of education, training, or efficiency.

Third, by and through these two rules of life and conduct, to make the profession so desirable that eligible young men and women will seek entrance into the profession.

There are great areas without osteopathic service. There is a wide field for research and opportunity. Our colleges are thoroughly and efficiently staffed, modernly equipped, educationally recognized in the class of professional schools. What more do we need to carry this wonderful profession to the very peak of all branches of the healing arts? Only the osteopathic physician's voice. Can you talk?

L. G. SCHACTERLE, Field Secretary,
Philadelphia College of Osteopathy.

CHANGE IN TECHNIC SECTION OFFICERS

THE JOURNAL for August, page 565, contained the American Osteopathic Association Roster for 1937-1938. The names of officers of the Technic Section were incorrectly reported. A correction was published in October, page 69, and the statement made that the chairman, W. W. W. Pritchard, had found it impossible to serve. The vice chairman, C. Haddon Soden, has become chairman, and George S. Rothmeyer, Philadelphia, has been appointed vice chairman. Martin C. Beilke, Chicago, remains as secretary.

COMMITTEE ON SPECIAL MEMBERSHIP EFFORT

F. A. GORDON
Chairman
Marshalltown, Iowa

MEMBERSHIP STATUS

Membership in the American Osteopathic Association has advanced this year until, as this JOURNAL goes to press, we list a total enrollment 10 per cent larger than at this time last year. This is not the only evidence of improved stability. While net gains continue at this rate, loss through delinquency has likewise registered a record low mark. Such development has been possible only through the work of present members everywhere. Your responsible officers appreciate this expression of cooperation and solicit your continued assistance.

Present Association members, who now advance all or part of their 1938-39 dues ($20), will be giving a very necessary stabilizing influence to the projects for which the dues were advanced by making it possible to estimate and plan intelligently.

HONOR ROLL

We know that much valuable effort frequently falls short of immediate results. For that groundwork we sincerely thank you.

As you forward new applications or renewals, please be sure to identify them for inclusion here.

During November, Divisional and A.O.A. memberships have been returned through the cooperation of the following members.

California
William Bartosh
Indiana
Walter S. Grow
Iowa
F. A. Gordon
Kansas
I. E. Nickell
Michigan
C. J. Karibo
Missouri
J. L. Hirst
New Jersey
J. C. Button, Jr.
Wm. C. Bugbee
Ohio
H. L. Benedict
Gertrud Helmecke
Pennsylvania
Chas. M. Worrell

Since August 1, the following indicated number of Divisional and A.O.A. memberships have been returned through the cooperation of the following members.

A=5 A.O.A. Members

Alexander, J. R. (Tex.) AA
Bugbee, Wm. C., (N. J.) AA
Conley, Geo. J. (Mo.) AA
Craft, A. D. (Iowa) DD
Gordon, F. A. (Iowa) DD
5—A's

D=5 State Members

Hannan, D. E. (Iowa) D A
Jones, Margaret (Mo.) AA
Jones, J. L. (Mo.) A
Riley, Geo. W. (N. Y.) AA
Shablin, Herman (Mo.) AA
Ward, E. A. (Mich) AAA
Woods, J. M. (Iowa) D

MEMBERSHIP GAIN SINCE AUGUST 1, 1937

Analysis of the net gain of 342 members as of December 1, shows that thirty-eight divisional societies registered net A.O.A. membership gains sufficient to offset slight losses in eleven divisional societies and to advance the total membership figure 6.5 per cent above the mark of August 1, 1937.

GROUP A
(Societies of more than 200)

	Per Cent of Gain on Dec. 1, 1937
Texas	22.60
California	15.40
Missouri	10.80
Kansas	8.95
Michigan	8.09
Iowa	6.79
Pennsylvania	6.56
New York	6.09
Oklahoma	5.26
New Jersey	5.00
Ohio	2.64
Illinois	1.40
Massachusetts	.48

GROUP B
(Societies of 100-199)

	Per Cent of Gain on Dec. 1, 1937
Florida	11.76
Colorado	6.81
Washington	4.41
Maine	4.31
Indiana	2.47
Nebraska	1.35
Wisconsin	1.05

GROUP C
(Societies of 50-99)

	Per Cent of Gain on Dec. 1, 1937
South Dakota	9.37
Connecticut	9.09
Montana	8.69
Georgia	5.88
West Virginia	5.26
Oregon	4.87
Ontario	3.92

GROUP D
(Societies of less than 50)

	Per Cent of Gain on Dec. 1, 1937
Alabama	50.00
Utah	50.00
Hawaii	25.00
Quebec	20.00
Mississippi	16.66
Wyoming	11.11
Idaho	8.69
Kentucky	7.69
Arkansas	5.55
New Hampshire	5.00
Vermont	3.57

F. A. G.

Obstetrics and Gynecology

OSTEOPATHIC POSTPARTUM CARE*

MARGARET JONES, D.O.
Kansas City, Mo.

Although the actual delivery process is the culminating event of pregnancy, indeed, is rightfully considered the climaxing incident of the reproductive cycle, there do belong to the puerperal period certain physiological and pathological phases which have received far too little consideration by the obstetrician. This lack of consideration of the puerperium has caused women unknown misery, disability and invalidism. The necessity for their seeking the gynecologist or the surgeon or both could often be obviated by proper postpartum care.

Fortunately, increasing numbers of pregnant women are availing themselves of beneficial antenatal care which is making marked strides in controlling the toxemias of pregnancy, curtailing the ravages of syphilis, and educating women in hygienic and sanitary matters. Not only the medical world, but the economic, social and political worlds as well, have become actively engaged in spreading the gospel of prenatal care. These are splendid endeavors and deserve the acclaim which they receive.

One obstetrician[1] jars the complacency which is associated with our consideration of improved care for pregnant women when he says, "While prenatal care has improved, and puts a woman into the confinement chamber in better condition than formerly, here is apparently where the greatest danger commences."

Surely some of the present accusations[2] against American obstetricians shall not prevail indefinitely. These criticisms are that they too frequently resort to methods for interrupting the natural course of pregnancy and labor; that they are unduly influenced by the agitation which writers of sensational stories have aroused in the lay mind regarding the relief of pain during delivery and as a consequence administer analgesics and anesthetics and resort to instrumental and abdominal deliveries against their better judgment. While these practices are generally conceded by obstetrical authorities as contributing to high mortality in this country, we must recall that much of the mortality and morbidity associated with obstetrics in our land today is traceable to physical and nervous demands placed upon women by an unnatural, complex, overmodernized civilization, therefore, chargeable to society at large.

One who has made extensive and intensive study of reproduction among primitive peoples declared that "Women who are engaged in manual labor and who have a muscular system normally developed by the regular daily activities have easier labors than those who lead sedentary lives. As a rule, the babies are smaller and tend to lie in a normal position in the uterus."[3] This same author has observed recently that "The round pelvis was characteristic of primitive women and showed well-developed sacroiliac joints. The conditions of primitive life lead to constant exercise of the sacroiliac joints. The squatting posture used by both men, women and children while sitting, as well as for defecation, also favors development of these joints." It seems that these developments of pelves result from "general conditions of life" rather than from mysterious racial influences as such. Again, in the Johns Hopkins Hospital maternity service, a twelve months post-delivery examination revealed that the occurrence of all soft tissue birth injuries, including subinvolution, were less frequent in black than in white women.[4]

Bonney[5] contends that childbearing is a "physiologic phenomenon in the life of the race, but not in the life of the woman." Since we are physicians dealing with individuals, we are compelled to consider the woman—to cope with her

*Delivered before a meeting of the American College of Osteopathic Obstetricians, held during the Forty-First Annual Convention of the American Osteopathic Association at Chicago, July, 1937.

physical problems rather than to subscribe to the ideal supposition that reproduction is physiologic. Furthermore, in this particular discussion, we shall confine our attention to postnatal care.

Puerperium suggests to us the many and complex changes which involve not only the local reproductive organs, but also the whole maternal body in an attempted restoration to the normal nonpregnant state. Williams[5] aptly refers to uterine involution as "the most striking example of atrophy with which we are acquainted." Details of interesting tissue changes of the puerperium have no place in this paper.

The puerperium may be considered logically in three parts: immediate, intermediate, and remote.[1] Using this arrangement of postnatal study, we may well turn our attenion to the complications which are most prone to occur during these three phases:

(1) Immediate puerperium ends with resumption of limited activities, which is usually 12 to 14 days following delivery. Most frequent complications of this period are: hemorrhage, urinary retention, sepsis, toxemias, lactation problems and blood dyscrasias.

(2) Intermediate puerperium ends with completion of involution and may present such difficulties as relate to bad posture, breast difficulties, manifestations of birth canal injuries, and malpositions of the uterus.

(3) Remote puerperium extends to and includes the time when the maternal organism has returned to its nonpregnant state and may present such problems as anemia, restoration of the menstrual cycle, and the after-effects of pelvic infections.

All authorities are agreed that routine postpartum care shall include adequate rest, protection from contamination, proper nourishment of mother and babe, and such general and special items as will encourage the reestablishment of normal body functions.

J. R. Goodall[2] estimates that "80 per cent of women are left with a pathogenic residuum from their labors . . . chronic endocervicitis." We could consider at length many problematical puerperal conditions which confront us from time to time, but we have space for only a few.

Much speculation exists as to the most efficacious treatment of such troublesome puerperal conditions as puerperal mastitis,[3] the very last word in the treatment of which seems to be roentgen irradiation. Incidentally puerperal phlebitis[4] seems to be yielding satisfactorily also to small doses of x-ray therapy.

Ascheim-Zondek tests have become so reliable for determining biochemical association between mother and ovum that a British authority[5] suggests that they be used routinely on the fifth puerperal day "for the diagnosis of retained living products of conception."

Marked unanimity of opinion has been reached recently as to the postpartum care of the uterine cervix. Immediate inspection following delivery is now encouraged and repair of bleeding or extensive lacerations made except in the presence of contraindications such as "shock, infection, or imperfect aseptic surroundings." The cautery is indicated for tardy healing after a few weeks time and repeated, if necessary, "until the entire cervix is perfectly epithelialized" failing which "deep cautery, trachelorrhaphy or amputation" must be resorted to.[6]

British obstetricians emphasize the necessity for prolonging aseptic precautions not only throughout the stages of labor, but also during the lying-in period. Furthermore they, especially L. Colebrook,[7] stress the opinion that "hemolytic streptococci of the respiratory tract constitute the chief menace in maternity work" and that this deadly infection springs from persons with "recent acute infections of the respiratory tract." It should be remembered that the source may be the patient herself, her home associates or the "healthy carrier" who in turn might be her physician or nurse. There exists an urgent need for masks to be worn by maternity attendants and for a lasting disinfectant to be used freely. We observe that the chief concern is prevention of sepsis.

Perhaps "Dettol," a halogen derivative of xylenol, which is being made in, and dispensed from, England presently will command first place among obstetrical antiseptics.

Care for postpartum pelvic inflammation must include the Elliott heat treatment upon which most physicians who have used it express a more or less favorable opinion and about which thousands of women have heard. Personally, I was astonished and horrified when first I beheld an Elliott applicator inserted into the vaginal tract of a febrile puerperal woman on her third postpartum day regardless of some twelve perineal stitches. But my astonishment yielded to agreeable surprise the following day as the patient showed marked improvement. Complete recovery promptly followed. In my own practice since that time I have been highly pleased with the results obtained. It is unnecessary to elaborate upon the technic or principle of this popular localized heat therapy. In passing, I cannot refrain from referring to the comments of some of America's foremost obstetricians and gynecologists: Fallas[8] says, "The Elliott treatment is urgently indicated in acute pelvic inflammatory disease whether of postpartum, postabortal, or specific origin, or in acute exacerbation of chronic inflammatory disease." Filler[9] says, "A proved case of gonococcemia resulted in recovery without a resultant cardiac lesion. There was no specific or intravenous medication employed. There was no surgical intervention."

There exists considerable difference of opinion regarding consequences from the retropositioned uterus. But the greater number of authorities advise postpartum treatment calculated to place the fundus anterior. About 30 per cent of puerperal women will show a retropositioned womb at their thirty day pelvic examination; most of them being retroflexions which are accompanied by a large boggy uterine body.[10] Classical treatment for this condition consists of knee-chest positions, pessaries, and hot douches. It is of paramount importance for osteopathic physicians to examine these cases carefully for lesions of the joints of the pelvic girdle, the correction of which results most favorably upon the soft tissue pelvic contents, restoring normal tone to ligaments, reestablishing proper circulation of blood and lymph, and thereby lessening the influence of inflammation and the development of infection in the puerperal pelvis.

Postpartum backache, ranging from slight discomfort to severe pain as a result of derangement of spine and pelvic girdle bony parts, is suffered by many women. In the 1936 "Year book of Obstetrics and Gynecology" the statement is made: "Persistent backache is a common complaint. This is more often due to a relaxed or strained pelvic girdle, with the major discomfort centered in the sacroiliac joints, than to abnormal positions of the uterus." In confirmation of this statement we quote DeLee[11] who explains that, "During labor, if the sacroiliac synchondrosis is loose, the ilium may be dislocated on the sacrum." In another book, the same author says, "After delivery the solidity of the pelvis is rapidly restored, unless the synchondroses were injured, in which case the patient may be bed-ridden for weeks or months. Milder cases of injury to the sacroiliac joints are undoubtedly commoner than is generally believed. Such injury explains many of the prolonged backaches and neurasthenic states following parturition. . . No doubt in former years we kept puerpera in bed too long, but we thought that it prevented the backache, also held to be due to subinvolution, relaxation of the uterine ligaments, and descensus uteri. Now we are inclined to ascribe the backache to injuries of the pelvic joints."[12]

Anatomical alterations[13] are gradually wrought during pregnancy. But the changes which take place in soft tissue of the pelvis during and immediately after labor are, indeed, sudden. The progress of pregnancy necessitates an enormous increase in blood supply to the pelvis, particularly to the uterus. Contraction and retraction of that organ following delivery result in marked torsion of blood vessels which in turn cause pelvic congestion and engorgement with their

resultant bad effects. Certain exercises, including the assumption of the knee-chest position, designed to relieve the pelvis of venous stasis as well as to encourage the uterus to assume its proper position in the pelvis and to tighten abdominal muscles (better than can be done by a binder), should be taken by the patient. These are to be practiced as soon as the lochia no longer contains bright red blood, the subsequent appearance of which indicates discontinuance of these exercises temporarily. Indeed, a more active puerperium is generally recommended by well-known obstetricians.

These explanations are logical cause-effect conclusions and approach closely the osteopathic concept of etiology and treatment. One of the nearest approaches to osteopathic theory may be found in a book by Goldthwait *et al.*[26] In reading this book we were astonished to find osteopathic facts, with which we have been intimately familiar for several decades, announced from a source bitterly opposed to our practice but surreptitiously subscribing to our principles: "Much of the gynecological disability and long periods of weakness following some pregnancies can be explained on the basis that the compensation for long-standing faulty Body Mechanics has been broken by the burden of pregnancy and parturition and when once broken, the badly used body is unable to regain its compensation and strength. A proper understanding of the principles and practice of the correction of faulty Body Mechanics would save much of this trouble. The pelvic organs in the female are one of the commonest sites of malignant disease and here again, even more than elsewhere, are the same factors of chronic congestion and irritation."

Present-day osteopathic physicians take cognizance of these mechanical influences as did the pioneers in osteopathic therapy who were taught by Dr. Andrew Taylor Still thirty-five years ago and who recorded his teachings in books long before the Goldthwait book was published.

Woodall[27] in "A Manual of Osteopathic Gynecology," published in 1906, recommends local treatment for subinvolution by direct manipulation of the uterus for a local tonic effect. He furthermore advises that, "The fifth lumbar should be very carefully examined owing to its intimate relation to the hypogastric plexus, which is situated on its anterior surface, and its location at one of the natural 'breaks,' or weak places in the spine." In this connection "muscular contractures are often secondary to disease of the pelvic organs."

Again I read with interest in a book published in 1904 by M. E. Clark, D.O.,[28] the explanation that, "displacements of the ninth, tenth and eleventh dorsal vertebrae cause ovarian congestion by affecting the vasomotor center of the ovaries." He adds that these particular spinal joint lesions affect the nerve" and blood supply to, and drainage of, these spinal segments, so if these nerve cells are affected in any way, the impulses arising from them would be disturbed." How gratifying it is to us, as osteopathic physicians, to know that practitioners of our school of practice discovered these facts clinically and demonstrated them therapeutically long before members of the allopathic profession announced them.

It is also a great satisfaction to follow through to the present time and read the convincing articles by osteopathic authorities published in the last few years. I shall quote, first, C. H. Downing, D. O.,[29] who says, "All structures, whether visceral or somatic in central relation, are responsive to sensory impulses reaching that segment of the cord—whether initiated primarily in the visceral or skeletal structure. The maintenance of normal trophic influences of somatic and visceral structures in central association is therefore dependent upon the proper or adequate initiation and the uninterrupted and unobstructed flow of mutual and reciprocal or corresponding currents of sympathetico-trophic and somatico-trophic sensory and motor influences. It is evident that sensory impulses from the viscera incite reciprocal activities in the skeletal structure applying to the same segment of the spinal cord and may act as corresponding pace makers for trophic, circulatory, and muscular reactions in the spinal structures."

E. E. Tucker, D.O., and Perrin T. Wilson, D.O.,[24] say, "There are external and internal causes of osteopathic lesions. The external causes may be classified as applied force, sudden—as in unexpected violence; severe—as in muscular strain; and sustained—as in posture. The internal causes are local or reflex contractures, local or systemic disease, and points of natural mechanical weakness. . . . After the osteopathic profession had for years called attention to lesions of the sacroiliac joint, it finally became generally recognized by other schools of medicine. . . . In adding this valuable but intricate diagnostic technic to the generally accepted medical procedures, osteopathy has made a vital contribution to the diagnosis of disease. . . . The A. T. Still Research Institute has proved that even minor disorder may create acidosis around the lesion, in the cord at the level of the lesion, and in organs connected with that level of the cord."

Oliver P. Grow, D.O.,[30] one of osteopathy's most successful obstetricians, stresses the "pelvic normalizing treatment" as soon after delivery as the patient is cleansed and has a sterile dressing over the vulva. This procedure restores to normal the anterior lumbar curve and frees the tissues around the internal pudendal nerve.

In brief, the intelligent application of osteopathic measures during the puerperium affords the greatest safeguard against occurrence and continuation of chronic pelvic pathological conditions which afflict so many of our childbearing women.

It is most unfortunate that the burden of additional tasks necessitated by the care of a new baby is thrown upon a young mother who, in most instances, is absolutely untrained for the undertaking and at a time when she is emotionally unstable, physically depleted, and socially maladjusted. The circumstance is trying enough even if all goes well, but in the presence of one or more of the physical complications which we have considered, or many others which might be included, the necessity for the physician's care is apparent.

Lactation should be persisted in if at all possible in an attempt to save the baby's life as well as to continue glandular re-adjustment for the mother. The prevailing lessening of milk supply which occurs about the time of getting out of bed must not be considered a permanent end to lactation. A diet consisting largely of wheat cereal and other wholesome, nutritious foods of high vitamin value together with osteopathic upper thoracic and cervical treatment will usually suffice to maintain adequate milk supply.

Too often even the physician loses sight of the fact that the puerperal woman is a convalescent from an "illness of nine months' duration" culminated by strain, shock and trauma of labor, frequently assuming major surgical proportions together with the attending evil effects of analgesias and anesthesias. Certainly a patient thus afflicted is deserving of better outlined convalescent care than she routinely receives. The new mother, as well as the babe, should have several examinations during the first three months following delivery instead of the one or two ordinarily recommended and which frequently are overlooked altogether.

My contention is that the osteopathic physician is best able to provide that care and that any or all beneficial postpartum measures are enhanced many fold if used in conjunction with applied osteopathy.

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Foot Section

THE TREATMENT OF FRACTURES OF THE LOWER EXTREMITIES*

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Every osteopathic physican has at some time in his practice realized how much more he has to offer his fracture patients than practitioners of any other school of the healing art. In addition to his fundamental training in anatomy and physiology, he has developed by years of practice a manipulative technic which cannot be learned from any textbook.

With this knowledge he is better equipped than any other physician to bring about the reestablishment of normal function to an injured limb. He also knows that instead of his work being finished as soon as a callus is formed, he is then entering upon a period of treatment which is as important and necessary as is the careful alignment of the fragments of the fractured bone.

Before any physician should consider himself competent to handle fractures, he should familiarize himself with all of the types of common fractures in addition to studying carefully all of the various splints and appliances on the market for the treatment of these conditions. Besides this, he should develop a workable knowledge of the uses of plaster of Paris bandages in the making of casts and splints.

A fracture may be defined as a break in the continuity of a bone or cartilage. There are many different types of fractures, their names being descriptive of their particular characteristics.

A *simple fracture* is a solution of continuity of a bone without a break in the skin.

A *compound fracture* is a solution of continuity of a bone with an open wound leading to the bone injury. There are two types of compound fractures: The first is the one in which the bone penetrates the skin from within outward, and the second is one in which an object such as a bullet, penetrates the skin from without inward. The latter is considered to be the worse type of the two as foreign matter carried into the wound always increases the chance for infection. Both of the above mentioned fractures are considered to be *primary* since the wound occurs at the time of fracture. A *secondary compound fracture* is one which has been rendered compound by the sloughing of the tissues over the site of fracture or by surgical procedure.

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A *greenstick fracture* is an incomplete break of the shaft which occurs in the bending of a long bone. The cortex is broken on the convexity of the curve. The bone is usually split longitudinally in either direction from the site of fracture.

A *comminuted fracture* is one in which not only is there a break in the continuity of the bone, but also the bone is broken into multiple fragments.

An *impacted fracture* is one in which the fragments of bone are telescoped.

A *pathological fracture* is one occurring in a bone which has been weakened by some disease or abnormal condition.

Symptoms of Fracture.—The subjective symptoms may be classified as follows:

(1) Pain—the character and location of the pain suffered while the extremity is at rest and the site and amount of localized pain during the examination of the injured member.

(2) Tenderness—the amount of tenderness varies directly with the extent of injury to the soft parts and with the elapsed time following the injury. Care should be taken to find the maximum point of tenderness, which will be directly over the site of fracture.

(3) Loss of Function—the amount of movement in the injured limb should be checked first without resistance and then with resistance. This movement will vary with different types of fractures.

The objective symptoms of a fracture are:

(1) Constitutional—all fractures are accompanied by a certain amount of nervous shock. In simple fractures this usually is not present to a marked degree but varies with different individuals. However, in severe compound fractures with extensive damage to the soft tissues accompanied by severe hemorrhage, the shock may be so severe as to demand immediate treatment before any attention can be given to the fracture itself.

Most fracture patients will run a slight amount of fever accompanied by a mild leucocytosis. These symptoms sometimes lead one to suspect infection, but they are in reality caused by the resorption of the extravasated blood.

(2) Deformity—this denotes a change in the shape or position of the part as a result of alterations in the bony structure itself. The search for deformity should be the first step in the examination of a suspected fracture case. If in the leg or foot, the injured member should be compared with the opposite one by inspection, palpation, measurement, and x-ray.

(3) Swelling—in the vicinity of a fracture swelling is the result of an extravasation of blood and serum into the soft tissues. In severe fracture cases this may be the dominant feature of the injury and require the first attention.

(4) Ecchymosis—the presence of blood in the subcutaneous tissues is the cause of discoloration. It is usually present after a fracture of the lower extremity.

(5) Abnormal Mobility—motion in a limb at a point or in a direction other than normal is a very important sign in the diagnosis of a fracture.

(6) Crepitus—true bone crepitus is considered to be an important and positive point in the diagnosis of a fracture.

WEIGHT-BEARING IN THE LOWER EXTREMITY

Authorities have estimated that 35 per cent of the fractures treated involve the legs and feet. The question of weight-bearing is a very important one to consider in the treatment of fractures of the lower limb. The lower extremity which has sustained a fracture in any one of its weight-bearing bones must be given protection for a longer period than a similar fracture of the upper extremity, because, when a lower limb is put into use it must at once begin to carry weight.

The object of the treatment of fractures of the lower extremities is the reestablishment of stable, weight-bearing function, avoidance of shortening, and the preservation of motion in contiguous joints. The usefulness of the lower

limb depends upon a reasonably accurate repositioning of the fractured parts. Joint surfaces must be made to resume their natural planes and the long bones their anatomical weight-bearing lines as nearly as possible.

Function implies usefulness which should be restored to a limb as quickly as possible. The effects to be guarded against in any fracture are shortening, bending, distortion, stiffness of the joints, atrophy of the muscles and chronic swelling.

FIRST-AID CARE FOR A SIMPLE FRACTURE

The first aid a fracture patient receives often determines the end result; it should consist, first, in the treatment of shock and, second, the treatment of the fracture itself. "Splint them where they lie," is the key to the care of all fracture cases. It must be remembered that the injuries resulting from fractures are not limited to those received at the time of the accident. Many cases have been aggravated by attempts to use or move the injured limb. Immediate emergency splinting protects the soft parts from injury during moving and prevents an increase in the deformity of the limb.

Muscle spasm is at a minimum immediately after injury, but later, it plays an important part in causing displacement. Every unnecessary manipulation should be avoided and the patient moved with extreme care only after all parts have been immobilized.

In a fracture of the femur or the upper end of the tibia, a pillow placed on a board and bound to the lateral side of the patient with another board running down the medial side of the limb will give relief. The lateral board should extend from the axilla to the foot while the medial one should reach from the crotch to the foot. The foot should be bound to the boards to prevent rotation of the limb. Care must be taken to hold the foot at right angles to the limb. If no pillows are to be found, the boards can be padded with coats, blankets, or any other material available.

If the injury is in the tibia or fibula and only a pillow is at hand, place it lengthwise under the limb. Its sides are then folded up so as to encircle the limb and fastened together. The ends of the pillow below the foot are then folded up so as to hold the foot at right angles to the leg and fastened in this position. This type of temporary splint should be reinforced by boards along the sides and posterior surfaces of the pillow whenever possible.

If there is no material of any type at hand which can be used as a splint, simply bind the two limbs together using pieces of clothing or a belt for the binding material.

FIRST-AID CARE FOR A COMPOUND FRACTURE

The immediate care of a patient suffering with a compound fracture should consist of treatment for shock, followed by treatment of the wound. The clothing should be removed from the part and the wound treated at once with a strong antiseptic, then covered with a sterile gauze pad and bound firmly. If the fractured ends of the bone are protruding, one should not try to reduce them at the scene of the accident. The limb should be splinted as for a simple fracture and the patient transported to a hospital for débridement of the wound, the injection of tetanus antitoxin, and the proper reduction with the aid of the fluoroscope.

Upon arrival at a hospital or suitable place for the handling of this condition, a careful, thorough examination should be made in which only the simplest methods for the diagnosis of fractures should be used. One should never attempt to reduce a fracture until the part has been x-rayed. All unnecessary handling of the injured limb should be avoided. One should not be deceived by the absence of deformity and disability, for in many cases of fracture, some ability to use the injured limb may persist.

A sufficient examination is one which includes a short history of the injury, a brief but thorough inspection of the limb and palpation to localize the point of greatest tenderness, together with a slight test for false motion. The physician should always look for more than one fracture. No x-ray examination is complete unless the limb is x-rayed in two planes. One should be careful to look for nerve lesions and for associated injuries before completing the examination and starting the reduction of the fracture.

Attention must be paid to the general physical condition of the patient in addition to determining the type of fracture, since the most important object is to sustain life. Enough morphine should be given to relieve pain. Shock should then be treated by application of heat and the use of stimulants by mouth and by hypodermic injection of normal salt solution or glucose, and blood transfusion if necessary.

If a tourniquet or a tight compress has been used to control hemorrhage, it should be loosened for a few minutes at the end of the first hour and then tightened again. This procedure should be repeated every twenty minutes thereafter to avoid gangrene.

It must be remembered that the examination of the patient must not be made simply to establish whether or not a fracture exists, but to determine the true condition of the patient.

TREATMENT

When a bone is broken, the object of any treatment is to obtain union of the fragments in a good functional position, the restoration of movement in the adjacent joints, and the restoration of power in the muscles of the limb in the shortest possible time. Every fracture must be considered as an individual problem and treated accordingly.

The original displacement of the fragments is due to the force which caused the fracture while the overlapping and lateral displacement is due to muscle pull. In every fracture there occurs not only a crushing of the bones, but also at the same time a more or less severe injury to the muscles with an effusion of blood from the torn vessels. Since the limb has lost its internal support, the muscle balance is destroyed and the blood flows out into the surrounding tissues. All fractures are accompanied by a muscle spasm which is involuntary in action. This muscle spasm must be overcome by the application of traction and countertraction if the overriding fragments are to be correctly aligned. In most cases this can be accomplished under anesthesia, but in certain types of fracture of the femur the muscle spasm is so strong that it must be overcome by gradual traction applied over a period of weeks. Even after the muscle spasm has been overcome, the muscle tension must also be counteracted. This can be accomplished best if the joints near the fracture are placed in a position midway between flexion and extension.

Continued traction maintained after reduction, should be combined with suspension, which provides easy access, eliminates friction, and permits movement of the joints, thereby helping to maintain proper circulation of the limb. Early movement of the adjoining joints is necessary and is helped by proper fixation of the fragments. The earliest and most complete movement possible should be the objective in every form of treatment of a fracture case.

One of the principal advantages in the use of plaster of Paris casts or splints is that if they are properly applied they fit the patient more accurately and are more comfortable than any other form of apparatus used. Once the plaster has hardened and it has been determined that the condition of the limb is satisfactory, the plaster requires very little attention from the surgeon until time for its removal. On the other hand, splints require frequent inspection, adjustment, and reapplication.

Unless an individual is using great quantities of plaster of Paris, it will be cheaper to buy the bandages already prepared and sold in cans of various sizes. Good plaster of Paris should set in about seven minutes.

In the application of plaster of Paris bandages, the skin should first be scrubbed with soap and water, dried, washed with alcohol and then powdered with stearate of zinc. It should then be protected by a stockinet or several layers of sheet cotton padding with felt over the bony prominences. The stockinet is easier to apply than the sheet cotton wadding and makes a smoother padding.

The sheet cotton wadding is cut into rolls of from two to six inches in width and applied as an ordinary bandage. It should be rolled snugly around the limb and should be two or three layers thick. One of the important things to remember in applying a cast is to use enough padding but not too much.

After the sheet cotton wadding has been applied, the bony prominences are next covered by strips of saddlers' felt. In applying a spica bandage of the lower extremity a wide strip of felt should be placed over the sacrum with smaller pieces over each anterior superior spine. Both the heel and Achilles tendon should be protected, while in slender individuals a piece of felt should be placed over the head of the fibula to protect the peroneal nerve from pressure where it winds around the neck of the fibula.

After the padding has been carefully applied and the limb checked to make sure the alignment of the fragments is perfect, a plaster of Paris bandage should be placed on end in the warm water. When the bandage is ready for application, bubbles will cease rising to the surface. It should then be grasped at either end and slowly squeezed by compressing the hands toward each other. As this bandage is removed another should be placed in the water so that a continuous supply will be kept ready. Once a cast is started, it should be completed rapidly or it will harden in layers and the end result will be a crumbly cast that will not be comfortable or durable. If quick setting is desired, the addition of two teaspoonfuls of table salt to four quarts of water will accomplish this.

The plaster of Paris bandage should be applied smoothly and with even tension. It should be applied in the same manner as adhesive tape. The bandage should lie where it naturally falls and should never be twisted. To change the direction of the bandage it should be folded on itself and started in the desired direction. It should be tight enough so that it sets snugly with an even pressure across the whole width of the bandage to avoid the formation of tension bands.

The patient's limb should be maintained in the same position until the plaster sets, since movement of any type will cause either a break or a wrinkle on the inner surface of the cast and the development of a pressure sore later. The assistant should be careful in changing his hand holds not to make an indentation in the plaster as these indentations may also result in pressure sores. Since the cast will dry quickly, the limb can be placed on a large pillow so that the weight is distributed over a wide area, and the patient can be returned to bed.

When acute trauma or infection is present, the cast should be bivalved and the segments bound together by adhesive straps or gauze bandages so that they can be released at once should pressure or circulatory symptoms develop. While doing this, one should make certain that the cotton sheet wadding bandages are cut completely through as they can also form a constriction.

The weak point of any cast is over a joint. It has long been a common practice to reinforce a cast in this area by including strips of metal or board in the cast. However, this makes a very heavy cast and the material included generally interferes with the removal of the cast. The best method is to take a bandage of plaster of Paris of the desired width, soak it and roll it out on the table to the necessary length, and fold it on itself until the desired thickness is obtained. It is then laid on the cast over the area to be reinforced and incorporated into it.

Moulded plaster of Paris splints can be used in fractures of the lower limb where there is slight danger of displacement and where only simple immobilization is desired. These molds can easily be made by laying three or four layers of sheet cotton of the desired width and length on the table and then applying ten to fifteen layers of plaster of Paris bandage over the sheet cotton. This should be applied wet to the limb with the sheet cotton next to the skin and shaped to the desired position before binding it in position with a gauze bandage.

Although many ingenious splints and braces have been invented, only a few have become standard in the treatment of fractures. One of these is the Thomas splint which can be used in the treatment of fractures of the hip, thigh, knee, leg, and ankle. It can be employed for purposes of fixation and fixed traction in recumbency, for fixation and stilting with or without traction, and as an ambulatory splint for partial stilting with fixation.

The Thomas splint is designed to carry the weight of the body through the pelvis rather than on the affected extremity. It consists of a metal ring covered with leather. Extending from the ring are two side bars joined below the foot by a cross bar. The ring of the splint should fit the upper thigh loosely, lying posteriorly in the fold of the buttock, so as to take a bearing on the tuber ischii. The part of the ring in contact with the tuber ischii should be more thickly padded than the rest of the ring.

The splint should be long enough so that the two uprights or lateral bars extend some distance, six inches or more, below the sole of the foot when the ring is pressed against the tuber ischii. The ring should fit the patient so that the hand can easily be passed between it and the anterior surface of the thigh at the perineal level. Before applying the ring, the leather covering is softened with common soap suds. It should be soaped daily while in use.

When using a Thomas splint the limb is prepared by washing with soap and water, shaved and then rubbed with alcohol. It is then painted with compound tincture of benzoin which adds to the adhesive qualities of the tape in addition to having an antiseptic action. It helps also to allay the irritation brought on by the continuous use of the adhesive plaster.

The foot and leg are passed through the ring which is pressed well up into the perineum so as to rest upon the perineum and the tuber ischii. The extension strips are securely tied at the end of the splint while traction is maintained in the limb. Flannel slings are adjusted so as to support the limb in the splint, which is then gradually abducted to about a 45 degree angle. If a hinged knee piece is not available, the Thomas splint should be bent at about 15 degrees at the knee.

There are two kinds of traction to be used in the treatment of fracture cases. However, they are most effective when used in conjunction with the Thomas splint.

Skin traction will prove effective in most fractures of the long bones with the exception of supracondylar fractures of the femur and fractures involving both bones of the leg. Skin traction should be applied early, with the patient preferably under an anesthetic.

When applying skin traction, the skin should first be shaved and then painted with compound tincture of benzoin. Moleskin adhesive plaster is much better to use than plain adhesive, since it is much stronger.

In applying skin traction to a limb, a three-tailed adhesive strip is used for each side. The wide middle strip is applied directly up the side of the limb, and the narrow anterior and posterior strips are wrapped around the limb starting well above the fracture line. Care must be taken that the malleoli are protected from the pull of

the adhesive. After the moleskin adhesive plaster has been applied, ordinary adhesive is interlaced over the whole area, leaving only the patella and malleoli uncovered. The whole area is then covered by a rolled gauze bandage to prevent as much slipping as possible. The more nearly the limb is surrounded by plaster, the less irritation there is to any given point.

A small wooden block the width of the foot, having a hole through the exact center for a rope running from the weights is used as a spreader bar at the lower end of the adhesive.

It is to be remembered that in skin traction the weight is primarily on the muscles and soft tissues and not on the bones. Skin traction is chiefly designed to overcome the pull of the involuntary muscle spasm.

Skeletal traction or direct traction to the bone requires considerable skill in application and is indicated in the case of failure of skin traction and those cases where skin traction is not applicable. The following types of instruments are used for skeletal traction and should be applied under either local or general anesthesia:

Steinman Pin.—This is made of stainless steel wire. For ordinary skeletal traction a pin 4 mm. thick is used. The skin is cleansed and an incision is made down to the bone. The pin is driven through the bone and the traction cord is attached to the pin by means of a metal stirrup. This stirrup is fastened to the pin in such a manner as to do away with any chance of the pin slipping. Weights are attached to the traction cord and allowed to remain for the desired period.

Apparatus used for skeletal traction must be removed under just as strict conditions of asepsis as are used in their application. The limb is supported as usual in its Thomas splint. The dressing is removed from the two lateral wounds and the weight is disconnected. The wounds and surrounding tissues are carefully bathed in alcohol followed by the application of tincture of iodine. The steel pin or wire is bathed with alcohol and iodine and then carefully extracted. The wounds are again cleansed with alcohol and then dressed with sterile dressing. Skin traction is then applied.

Calipers.—These are made in a number of designs suited to the individual case. The area is cleansed with ether, iodine, and alcohol as for an operation. The limb is placed in a Thomas splint with a Pearson knee-flexion attachment. The skin is pulled upward on the limb on either side opposite the traction point and a small incision is made down through the muscles and periosteum to the bone. The caliper points are inserted through this incision and forced into the bone for about an eighth of an inch. Traction is then made on the calipers. If the skin presses against the lower margin of the caliper, the incision is enlarged below so that this pressure is relieved. Sterile dressing are applied around the caliper points and fastened on with adhesive. These dressings should not be touched for several days as frequent inspection increases the chances of infection.

Kirschner Wire.—In the use of the Kirschner wire the skin should be prepared in the same manner as for the application of the calipers or the Steinman pin. A small nick is made in the skin, the drill or wire is then passed through the muscle to the periosteum, then drilled through the bone and out to the skin on the opposite side, where the skin is again pulled upward and slit. The wire is pulled through the bone until it extends an equal distance on either side. Clamps are now applied to either end and tightened and traction is made on the wire. If the skin presses on it, the skin incision is enlarged until this is remedied. Sterile dressings are then placed over the incisions and bandaged in place.

Although there is always a chance of the calipers slipping, most surgeons prefer their use to that of the Steinman pin or the Kirschner wire as its use does not involve drilling completely through the bone. Supervision of the amount and angle of traction must be constant as any change, however slight, would nullify most of the effectiveness of this type of treatment. The following four points must be kept constantly in mind throughout the handling of the case: first, the line of traction; second, the amount of weight necessary to counterbalance the displacing pull of the muscles at any given angle; third, the application of traction to the fragments which can be controlled to hold it in alignment with the fragment which cannot be controlled; fourth, the protection of any bony joints from undue pressure; and fifth, the position of the joints above and below the fracture.

The length of the limb should be carefully controlled and inspected daily in addition to having frequent x-ray check-ups. The knee should be flexed daily, increasing the amount of flexion about two inches in the arc of motion each day. The skeletal traction should remain on for from three to five weeks or until the union is fairly solid. It should be removed as soon as the soft structures are healed and enough union has taken place to prevent a malposition of the fragments. When skeletal traction has been removed, skin traction should be substituted.

Handled correctly, skeletal traction is the ideal method for treating fractures. It must be understood thoroughly and handled carefully with special emphasis placed upon sterile technic.

The fear of resulting stiffness of the joints if the limb is immobilized too long, often results in the fixation splinting being removed too soon. The average period generally allowed for bony union is now being considered by authorities as too short. Böhler claims that a transverse fracture of the tibia in the middle third is never firmly united in the accepted six weeks time but requires ten weeks or more, while other bones require a proportionate increase in time for proper union.

SUMMARY

(1) "Splint them where they lie" is the rule for the immediate care of fracture cases.

(2) Shock is caused by fracture and is made worse by excessive handling.

(3) The physician in charge should treat the shock, stop the hemorrhage, splint the fracture, and transport the patient to a hospital.

(4) The action of the muscles involved in the fracture should be known.

(5) The fragment which can be controlled should be brought into alignment and proper relation with the fragment which cannot be controlled.

(6) Frequent check-ups with the x-ray should be made.

(7) Fixation apparatus must be watched constantly.

(8) The patient should be guarded against points of pressure in cast or splint.

(9) A fracture case needs osteopathic manipulative treatment to restore the injured parts and adjacent joints to normal function.

(10) A fracture properly reduced and held in reduction is not painful to the patient.

(11) The case is only half finished when the fragments are again joined together by a bony callus. This is the time when osteopathic principles and practice are utilized to hasten the progress of recovery.

40 S. Third St.

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Diagnosis and Treatment

AN EVALUATION OF THE BASAL METABOLISM TEST*

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I have selected from our files the records of 1,000 patients who, in the past eight years, have submitted to 4,560 basal metabolism tests. Primarily this monograph reports our own observations. In addition, discussion and correspondence with endocrinologists, together with a great amount of collateral reading, all have served to direct our thinking during the eight years this study has been in progress.

When we speak of basal metabolism, we think of the index of metabolic activity when the organism is functioning at its minimal physiological rate. Obviously the lowest, or basal, metabolic activity in the human is in progress when the individual is asleep, more particularly after he has had seven to nine hours of sleep, following total abstinence from food for three or four hours. Ideally, therefore, the basal metabolism test should be performed after a twelve hour fast and after eight hours of rest, and immediately before the patient awakens. This last consideration is not possible with present equipment for measuring the basal metabolic rate, and we are forced to the next best procedure. Thus, we make our test after a twelve hour fast and as soon as possible following an eight hour rest period.

Prior to undertaking our own work in this field, I accepted without question the metabolic readings on my patients who submitted to basal metabolism tests in various laboratories as their true basal metabolism index. I further accepted the old theory that "any basal metabolism reading between plus ten and minus ten indicates a normally functioning thyroid gland." I have demonstrated to my own satisfaction that we must not accept as absolutely correct basal metabolism readings by the average laboratory technician. Further, we have proved the old theory quoted above to be actually fallacious.

Regardless of whether the patient enters a hospital the night before the test and has the test performed there, or, with a minimum of mental and physical activity comes to the physician's office in the morning for the basal metabolism test, at least ten points must be subtracted from the lowest of three consecutively performed metabolism tests if we are to arrive at approximately the true index of basal metabolism on any patient. The amount of apprehension which the patient has about any test that requires such meticulous preparation in itself serves to raise that patient's metabolic rate of slight but varying amount.

The patient who spends the night preceding the test in the hospital, in a strange bed, in strange surroundings, is likely to sleep poorly, to be aroused when the six o'clock routine of the hospital begins, and to lie in the bed usually about two hours before the test is performed. That patient will not have an accurate basal metabolism test. Innumerable disturbing elements contrive to cause the patient to be in a very poor condition for accurate measuring of the basal metabolism index. Every one of these disturbing elements serves to increase the rate of metabolism.

Patients will do much better to spend the night preceding the test at home, and if they are supplied with a sheet of instructions explaining the necessity for a twelve hour fast, and eight hours of rest, immediately preceding the test, and absolutely a minimum of mental and physical activity upon arising in the morning, they can come to the physician's office in a relatively good condition for a metabolism test. Upon arrival at the office, tight clothing is loosened or removed, and the patient is permitted to lie down and rest not over twenty minutes on a comfortable couch in a room isolated so that the rest period is not interrupted by patients or office attendants passing through the room. At the end of the twenty minute rest period three metabolism tests are performed. Following each of the first and second tests a rest period of two to three minutes is permitted before instituting the subsequent test. I prefer to refer to this procedure as securing a basal metabolism test under "Ambulatory Basal Standards." After three consecutive basal metabolism tests have been performed, the patient is weighed and measured, nude, and the index of metabolic activity is computed. From the lowest of three readings we arbitrarily subtract ten points to compensate for the mental and physical activities that have been necessary, even though the "Ambulatory Basal Standards" have been fulfilled by both the patient and the technician.

For example, if our patient shows by the first metabolism test a plus four, the second test gives a reading of minus three, and a third test gives a reading of minus eight, that patient possesses actually a basal metabolism index of at least a minus eighteen.

We have proved this to our own satisfaction in many hundreds of tests. Innumerable instances have occurred where we have found an initial metabolism reading of minus four or five, and we have put that patient on a small amount of dessicated thyroid daily, perhaps two grains a day for three weeks, and at the end of that period when a second series of metabolism tests have been performed, we have found the basal metabolism index to be a minus fourteen, which would prove conclusively that the patient did not get a true metabolic reading in the first instance. Probably she did not follow to the letter our instructions in the matter of foregoing any physical activity immediately prior to the test. Perhaps she was overly apprehensive about the test. On subsequent tests the apprehension is definitely less in the average patient.

There is no way of computing the amount of substitution therapy (dessicated thyroid) a patient with thyroid disability requires on the basis of her height, weight, age, sex, color or creed. Thyroid therapy for a hypothyroid must be as individualized as insulin therapy for a diabetic. A physician who directs this therapy must consider intelligently the patient's basal metabolism index, subjective symptoms, and objective findings.

I have demonstrated in my own practice that patients of approximately the same age, weight, height, and sex, having a basal metabolism reading of approximately minus twenty-five, may require as little as one-fourth grain of dessicated thyroid daily or as much as five grains daily to achieve the results of physical and mental well-being and approximately a normal basal metabolism reading.

I hold no brief for any particular manufacturer's equipment for making basal metabolism tests. We have had experience with two types. The equipment we are using is guaranteed to be less than 1 per cent inaccurate.

Almost any intelligent individual can be taught in a very short time, to make a basal metabolism test; that is, the actual performance of the test itself is relatively simple. The technician, however must be instructed concerning all of the extraneous factors that enter into the final estimation of the individual patient's metabolic index. A critical supervision of the technician's procedure with constructive criticism of her conduct in the presence of the patient should be a part of the training of every technician.

Frequent changing of the soda lime, which removes the carbon dioxide exhaled by the patient, should be strictly adherred to. The metabolator must be kept

*Delivered before the General Sessions at the Forty-First Annual Convention of the American Osteopathic Association, Chicago, July, 1937.

covered while not in use to prevent an accumulation of dust in the essential parts of the machine. The machine should be stored where it will not be subject to traffic accidents. With proper care the machine itself should last the lifetime of the average physician. Minor replacements may have to be made, but these are relatively inexpensive.

CONCLUSIONS

The performance of 4,560 basal metabolism tests during the past eight years on 1,000 patients has demonstrated to my satisfaction the following points:

(1) Metabolic disturbances have been found in more than 50 per cent of the patients who have presented themselves for examination and consultation during the time this survey has been conducted.

(2) Unavoidable mental and physical activities preclude securing a true basal metabolism reading regardless of whether the patient goes to the hospital or comes to the physician's office for the test, and ten points must be subtracted from the lowest of three consecutively performed basal metabolism readings to estimate approximately the patient's true basal metabolism index.

(3) Computing the dosage of substitution therapy is impossible on any basis other than repeated basal metabolism readings, preferably over a period of two years. Consideration of the patient's caloric requirements, and subjective and objective symptoms must, in every case, supplement the information secured by the metabolism test. Basal metabolism readings repeated at close intervals are just as necessary in the care of the patient with thyroid pathology as accurate blood sugar determinations are necessary for the diabetic in determining the amount and frequency of insulin dosage.

(4) Hypothyroidism or hyperthyroidism occurs in a vast majority of patients manifesting functional or organic physical or mental disturbances, and a basal metabolism test should be routine on every patient who presents himself for assistance with a health problem that is not immediately obvious to the physician.

(5) I hope my next and last observation will serve to further awaken the interest of our profession to the necessity for determining the basal metabolism rate of every new patient. I have found in the past eight years that the incidence of some degree of thyroid pathology has been more than sixteen times as high as the incidence of positive Kahn and Wassermann tests on patients in my practice who have undergone complete clinical examinations.

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Current Medical Literature

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End Results of Respirator Treatment

In the *Current Comment* column of the *Journal of the American Medical Association* for Oct. 2, 1937, the following statements are made:

"The immediate dramatic results of the use of respirators in failing pulmonary function has received too much attention to necessitate reemphasis. The eventual issue in patients who have received this form of treatment, especially over prolonged periods, is not so well understood."

The article recites the reports of various physicians and surgeons who have treated a large number of cases using the respirator and in which the ultimate results were often unsatisfactory. "The use of the machine . . . for nine children with bulbar paralysis without intercostal involvement, although it seemed helpful, was often ineffective. Only two of these nine children survived. In such cases, therefore, he, [Wilson] recommends that the machine be employed only as an emergency measure and after every attempt has been made to free the pharynx from secretions . . . A considerable number of patients who survived developed deformities of the chest and many failed to recover the power of voluntary expansion of the chest. Smith, in a paper published in 1933 noted that data received from various orthopedic hospitals and convalescent homes revealed that about one-third of the respirator patients died and that the cause of death on the hospital records was given as broncho-pneumonia.

"All of twelve patients with bulbar lesions reported by Brahdy and Lenarsky died. Among thirty-four patients with spinal lesions only, twelve died in the respirator and four within six weeks after treatment."

Other series of cases reported, "Of nine having involvement of respiratory muscles only, five died and four survived. Of the ten patients with bulbar involvement all died, and of the five with both mechanisms affected, three died and two survived. . . Of eighty-eight cases of poliomyelitis treated in the respirator, death occurred in fifty-three in the hospital, a mortality rate of 60.2 per cent. Of the thirty-five patients treated in the respirator able to breathe without difficulty and without artificial aid, sixteen, or 45.7 per cent, had died at the end of eighteen months, practically all of them from respiratory infections. . . Twenty-seven of sixty-three patients treated in respirators were discharged from the hospital. Twelve of these twenty-seven patients who survived the hospital treatment died at intervals of from two weeks to two and a half years afterward. All of them had residual paralysis of some of the respiratory muscles. Seven of the surviving patients were either bedridden or greatly limited in their physical activities. Seven others alive at the time of reporting were well enough to attend school and two had no residual paralysis whatever."

A Simple Centrifugation Method for the Diagnosis of Syphilis

The method described by Rytz requires very little equipment, a minimum of technical skill, and only a few moments for its performance. Both citrated whole blood and unheated serum are satisfactory for the test, and the antigen is simple to prepare from Difco beef-heart powder and will remain stable for many months.

The diameter of the test tube must approximate the depth of the serum-ammonium sulphate-antigen mixture, which, in turn, is in the proportion of 1 part of emulsion to 3 parts of the serum. A tube 9 mm. (inside diameter) by 75 mm. is used. The unit of serum is 0.15 cc.; if citrated whole blood is used, the unit is 0.2 cc. To the serum in each tube is added 0.05 cc. of half saturated ammonium sulphate, and after shaking the rack, 0.05 cc. of antigen emulsion is added. The tubes are centrifuged at the rate of about 2,000 revolutions per minute for three minutes. Three cc. of distilled water is then added and the tubes inverted twice with the finger over the mouth. The tubes are again centrifuged for two or three minutes. The fluid content is decanted by completely inverting a handful of tubes, allowing complete drainage. To the sediment is added 1 cc. of 0.9 per cent saline. The results are easily estimated against a favorable light; in negative results the emulsion scatters rapidly by inverting the tube and the positive test has large floccules in a crystal clear fluid.

"This method was used in comparing results with several other methods of known relative value in 5,000 blood tests and over 800 spinal fluid reactions. In cases of treated syphilis it proved of equal value with the author's rapid flocculation test. In congenital and primary syphilis, it proved to be more sensitive, and on spinal fluid it proved to be more sensitive and more reliable than the Wassermann reaction as performed in the author's laboratory.—F. Rytz, Jour. Lab. and Clin. Med., 1937 (Aug.) 22:1186. Extract from *Venereal Disease Information* for November, 1937, United States Public Health Service.

Vaccine Therapy in Rheumatism

The further evaluation of vaccine therapy in rheumatism depends largely on clinical proof, based on the choice of which patients may be most likely to respond to treatment, on the preferred method or methods of administration and on valid criteria for controlling the results. Until these points are carefully considered, the use of vaccines in rheumatism, broadly considered, rests on pure empiricism. It is justifiable to employ them in selected cases under close observation with the object of obtaining more precise information. Their routine use, however, with any implication of certain cure cannot be too strongly deprecated.—Edwin P. Jordan, M.D., Jour. Am. Med. Assn., 1937 (Oct. 30) 109:1445.

Vitamin C, Scurvy, and Oral Diseases

In *Public Health Reports* for October 29, F. C. Cody, Dental Surgeon for the United States Public Health Service, says that "The high incidence of diseases of the dental investing tissues among the poor, and the fact that these conditions are allied so closely to the symptoms of scurvy lend credence to the opinion that there is an association between subclinical scurvy and gingivitis and Vincent's infection, and that some of these diseases may be superimposed as a secondary invader upon a subclinical gingival scurvy. This contention is supported by group studies and surveys of sections of the population whose diet is low in antiscorbutic foods."

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Abstracted by R. E. Duffell, D.O.

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A Brief Resumé of Pulmonary Tuberculosis. Glenn A. Axtell, D.O., Oakland, Calif.—p. 16.
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Disorders of the Placenta. Roger Abbott Peters, D.O., Berkeley, Calif.—p. 26.
Feet Versus Shoes. Dean M. O'Neil, D.O., Oakland, Calif.—p. 31.
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Transurethral Resection vs. Classical Prostatectomy. Lucius B. Faires, D.O., Los Angeles.—p. 31.
Traumatic Surgery. William Willis Jenney, D.O., Los Angeles.—p. 35.
Standing Orders for Osteopathic Manipulation Service. Wm. W. W. Pritchard, D.O., and L. B. O'Meara, D.O., Los Angeles.—p. 40.
Editorial: Self Protection for Doctors. Raymond Nettleship, Los Angeles.—p. 43.

***Thoracic Wall Restrictions in Relation to Lobar Pneumonia.**—In a series of thirty-seven hospitalized cases of lobar pneumonia, Decker found that 35 per cent had thoracic wall restriction previous to the onset of the disease. (All of these patients had been treated in the Outpatient Department of the Los Angeles County Osteopathic Hospital previous to the attack of pneumonia and their histories, x-ray findings, etc., were on file.)

In the age group between five and ten years, two of the patients had flat chests, one had had previous right wall restriction as a result of pneumonia, and two had a history of recent chest wall trauma. In the age group between ten and forty-five years, two patients had a barrel-type thorax, two had a long-standing osteoarthritis of the dorsal and lumbar spine, one had obesity which restricted thoracic movement, one had a flat chest, and two had long-standing pleural adhesions. In the age group between forty-five and seventy-five years, three patients had a history of previous restriction of the thoracic cage, two had osteoarthritis of the dorsal and lumbar spine and one had a left scoliosis.

Two cases in group two and one in group three were fatal. In each instance osteoarthritis of the dorsal region existed.

Decker is of the opinion that restricted chest movement interferes with adequate drainage of the bronchial tree and may be a factor in many instances of predisposition to pneumonia. When patients present themselves for physical examination and report that they suffer with frequent colds, chronic bronchitis, and pneumonitis, the physician should look for thoracic wall restriction. If this is found, measures should be instituted to bring about normal movement and relieve the patient of the pneumonic threat. Decker outlines two simple exercises for overcoming restricted thoracic wall movement, which together with the correction of dorsal spinal joint lesions to insure normal movement of the ribs, should increase the vital lung capacity.

THE JOURNAL OF OSTEOPATHY
KIRKSVILLE, MO.

44: No. 10 (October), 1937

Editorials: New Management. Forty-Five Years. W. C. Cozad, Kirksville, Mo.—p. 10.
Gunshot Wounds of the Stomach. Earl H. Laughlin, Jr., D.O., Kirksville, Mo.—p. 11.
Diagnostic Tests and Signs. Wallace M. Pearson, B.Sc., D.O., Kirksville, Mo.—p. 12.
Blood Pressure. Robert A. Fuller, D.O., Kirksville, Mo.—p. 15.
The Menopause with Minor Melancholia. Ralph H. Wahl, D.O., Herington, Kans.—p. 17.
Rectal Pathology. Part II. H. A. Dugiay, D.O., Detroit, Mich.—p. 19.
*Treatment of Pneumonia. W. F. Rossman, D.O., Grove City, Pa.—p. 22.
Cow's Milk. George M. McCole, D.O., Great Falls, Mont.—p. 25.

***Treatment of Pneumonia.**—Rossman is of the opinion that much harm can be done to a pneumonia patient if the so-called lymphatic pump treatment is used in the manner usually demonstrated. His reasons for being against its use are that there is a consolidated, inflamed area in the lung which "does not respond to respiratory movements and any pressure on the chest sufficient for compression will injure the consolidated area . . ." He says further that the "primary principle for all inflammations is rest. We would not manipulate an abdomen with an acute appendix or peritonitis; we would not manipulate tuberculous glands or apply the lymphatic pump to a case of pulmonary T.B., then why apply it to pneumonia?"

The osteopathic manipulative treatment of pneumonia should aim to accomplish the desired results without exhaustion of the patient. The frequency of the treatment varies with the case. Next to manipulative treatment, nursing is of utmost importance. Rossman says patients are more comfortable in a cool room, but cold temperatures should not be maintained which are uncomfortable to the nurse. The patient is not permitted to lie in one position more than an hour at a time. He must be turned from side to side and may even lie in the Sims' position or face downward.

Of the complications of pneumonia, tympanites is very distressing. Irrigation of the lower bowel with warm saline solution may relieve this. If not, hot wet fomentations over the abdomen may be used with safety. Rossman recommends the Wangensteen[1] method for relief of tympanites of the stomach and upper bowel. Pulmonary edema may result at any stage of pneumonia. The administration of oxygen often produces spectacular results. Oxygen treatment should not be delayed until cyanosis has appeared.

1. Drew, E. G., and Flack, A. M.: An apparatus for the Application of Continuous Negative Pressure for Drainage of Body Cavities. Jour. Am. Osteo. Assn., 1936 (Apr.) 35:369-370.

CORRECTION

The first class in osteopathy was graduated at Kirksville in 1894. It is hard to understand the slip by which THE JOURNAL carried the editorial statement last month that it is now 41 years since the graduation of the first class and that event occurred 21 years before the death of Dr. A. T. Still in 1917.

THE COLLEGE JOURNAL, KANSAS CITY COLLEGE OF OSTEOPATHY AND SURGERY KANSAS CITY, MO.

21:449-480 (September), 1937

Heart Facts of Interest. J. L. Jones, D.O., Kansas City, Mo.—p. 451.
Plastic Surgery of the Nose. A. B. Crites, D.O., Kansas City, Mo.—p. 460.
Causes of Pregnancy Toxemias. Byron E. Laycock, D.O., Kansas City, Mo.—p. 464.
The Postgraduate Course and Clinic. Charles Alhante, D.O., Kansas City, Mo.—p. 467.
*Chorea. Frank A. McLamb, D.O., Muskogee, Okla.—p. 468.
Prenatal Care. R. A. Murren, D.O., Kansas City, Mo.—p. 471.
Therapeutic Uses of Raw Apples and Bananas. Annie G. Hedges, D.O., Kansas City, Mo.—p. 472.
The Lakeside Hospital.—p. 473.
Acute Postoperative Catastrophies. George J. Conley, D.O., Kansas City, Mo.—p. 474.
"Read Unity." George J. Conley, D.O., Kansas City, Mo.—p. 477.

***Chorea.**—"Chorea is characterized by involuntary, awkward, purposeless, and irregularly spasmodic movements, especially of the hands, arms, and face." The specific etiological factor is not known, but the disease is recognized as a manifestation of rheumatic infection. It is definitely related to tonsillitis, arthritis, and endocarditis. It is essentially a disease of early life, usually between the ages of seven and fourteen years. The onset is gradual. The child becomes restless and fidgety, and is thought to be unruly. In school he has difficulty in using the hands for work such as writing and drawing. In the home he has difficulty in feeding himself and buttoning his clothes. He drops things easily and stumbles and falls often.

McLamb says that under osteopathic care the prognosis is good in the ordinary case; in severe cases the patients are greatly benefited. The correction of joint lesions is very important. Soft tissue manipulation soothes the nerves, making the patient drowsy and relaxed. All foci of infection should be carefully looked for and removed. The intestinal tract should receive particular attention. Hydrotherapy is a valuable adjunct.

JOURNAL OF OSTEOPATHIC OPHTHALMOLOGY, RHINOLOGY AND OTOLARYNGOLOGY BETHLEHEM, PA.

19: No. 3 (July-Aug.-Sept.), 1937

Biological Sketch of David S. Cowherd, D.O., President of American Osteopathic Society of Ophthalmology and Otolaryngology.—p. 4.
Editorials: A. G. Walmsley, D.O., Bethlehem, Pa.—p. 5.
The Chicago Convention.—p. 7.
A Word from President Cowherd.—p. 12.
*Clinical Findings—Relationship to Proper Management of Suppurative Middle Ear Inflammations. Ralph D. Vorhees, D.O., F.I.S.O., Cleveland.—p. 13.
Observations Concerning Diagnosis and Treatment of Iritis. A. C. Hardy, D.O., F.I.S.O., Kirksville, Mo.—p. 17.
A General Discussion and Treatment of Postnasal Spaces with Associated Deafness. C. Paul Snyder, D.O., F.I.S.O., Philadelphia.—p. 21.
"Multum in Parvo." T. J. Ruddy, Los Angeles.—p. 29.
The Eighth Annual Meeting of the I.S.O. A. C. Hardy, D.O., F.I.S.O., Kirksville, Mo.—p. 31.
Round Table Discussion.—p. 34.

***Suppurative Middle Ear Inflammations.**—Vorhees says, "to keep mental pace with clinical happenings in severe acute middle ear suppuration, it is quite necessary to check progress at least once a day." The patient's temperature, the amount of pain and its location, the amount of aural discharge, and the state of rest at night should be ascertained. The external ear and mastoid parts should be inspected. It is very important to follow the course of each symptom with respect to time, and according to the measurements of normal clinical variations. To illustrate, "Suppose that in five or six days after the initial ear pain, general well-being following drum incision is not maintained, that pain returns and temperature is again elevated, that there is a loss of appetite, that the patient becomes listless and pale and is restless at night. Until otherwise disproven, this finding is to be considered a milestone in the course of acute suppurative middle ear disease and clinically represents the development of mastoiditis. . . . Tenderness over the lower mastoid accompanies the majority of acute tympanic suppurations during the first few days. It is late tip tenderness, or tenderness that fails to disappear that enters into surgical judgment."

Book Notices

WORKMEN'S COMPENSATION: ITS MEDICAL ASPECT. By Sir John Collie, C.M.G., D.L., J.P., Lt.-Col. R.A.M.C., Consulting Medical Officer to the Ministry of Pensions; Medical Examiner to various accident insurance companies. Cloth. Pp. 160. Price, $2.75. William Wood and Company, Mt. Royal and Guilford Avenues, Baltimore.

Anyone interested in the problems of workmen's compensation in this country will find much of interest in this discussion of workmen's compensation acts in England. The author discusses the growth of compensation, its legal and medical aspects. His chapter, "What Is An Accident," is illustrated with court rulings. Quotations from court decisions are used freely also to amplify the chapters on the law and medical examinations and the law with regard to operations. The problems of complete or partial recovery and of the conditions surrounding return to work are also considered.

EVERYDAY PROBLEMS IN HEALTH. By Frank Merrill Wheat, Chairman of Department of Biology, George Washington High School, New York City, and Elizabeth T. Fitzpatrick, Department of Health Education, George Washington High School, New York City. Cloth. Pp. 440. Price, $1.20. American Book Company, 100 Washington Square, New York City.

A hygiene text for high school pupils, written by teachers who are not physicians. It deals with posture, diet, control of the body, maintenance of a healthful home, etc. Its readers are told that inoculation is a positive preventive of such diseases as diphtheria, smallpox and typhoid fever.

SCHOOL HEALTH PROBLEMS. By Laurence B. Chenoweth, A.B., M.D., Professor of Hygiene, University of Cincinnati, and Theodore K. Selkirk, A.B., M.D., Instructor in Pediatrics, College of Medicine, University of Cincinnati; Pediatrician, Hamilton County, Ohio, Board of Health; Pediatrician, Randall J. Condon School for Crippled Children; Cincinnati, Ohio, with a chapter on school health administration by Richard Arthur Bolt, M.D., Dr. P.H., Director, Cleveland Child Health Association; Associate in Hygiene and Preventive Medicine and in Pediatrics, Western Reserve University. Cloth Pp. 387. Price, $3.00. F. S. Crofts & Company, New York City.

An unusually well-organized book whose purpose is to acquaint students of education, teachers, and others interested, with the broad and general nature of health problems in schools. They have ranged far in their survey of the medical and educational literature, and combining the results of that search with their practical experience as health workers, they have produced a practical and scientific book.

OCCUPATIONAL GUIDANCE. By Paul W. Chapman, Dean, College of Agriculture of the University of Georgia. Cloth. Pp. 639. Price, $1.76. Turner E. Smith & Company, Atlanta, Georgia, 1937.

This well-illustrated, compactly printed volume is intended for use as a text in junior high schools or further on. It is stated that the author has taken the trouble to have the book checked for accuracy by those in immediate touch with the various fields discussed, but under medicine and surgery it is stated that the requirements for entrance to a medical college include three years of general college work; and when nursing is considered, it is said that only hospitals with 200 or more beds may be approved as nurses' training centers. There seems to be no discussion of osteopathy in the book.

OBSTETRICS FOR NURSES. By Joseph B. DeLee, A.M., M.D., Professor of Obstetrics and Gynecology, Emeritus, University of Chicago; Consultant in Obstetrics, Chicago Lying-in Hospital and Dispensary; Consultant in Obstetrics, Chicago Maternity Center, and Mabel C. Carmon, R.N., Chief Supervisor and Instructor in the Birthrooms, Chicago Lying-in Hospital and Dispensary. Cloth Pp. 659, with 292 illustrations and charts, some in colors. Eleventh edition, revised and reset. Price, $3. W. B. Saunders Company, Philadelphia, Pa., 1937.

During the thirty years since the first edition of this book appeared it has taken its place in the forefront of textbooks on the subject. Because of the growing hospitalization of maternity cases Dr. DeLee felt that a fuller consideration of the details of institutional technic was necessary and for this purpose he obtained the collaboration of Miss Carmon. This change is the most important feature of the new edition but other parts of the book also have been brought up to date.

THE CITADEL. By R. J. Cronin. Cloth. Pp. 401. Price, $2.50. Little Brown and Co., 34 Beacon St., Boston, Mass., 1937.

The physician will find "The Citadel" an interesting, even gripping, book. Critics in the medical profession say the indictment of the medical profession in Great Britain is overdrawn, exaggerated, and not true to life. Physicians who read it will find that criticism hard to believe. The author has woven a mass of detail into a novel which is undeniably, in interest at least, away above the average of the day.

If any of the facts in the book may be depended upon (and the reviewer cannot find himself honestly doubting many) the book is a terrible indictment of the panel system of sickness insurance as it is apparent in Great Britain. It is a criticism of the inevitable bureaucratic red tape of the public health system, both local and national. It is another diatribe upon the "uselessness of most drugs." If the members of the medical profession or the system of medical distribution have any other fault than those opened up in this book, we have never heard of it before.

The physician will want to read the book if only to boost his own ego by contrasting his own probity with the chicanery and ignorance which the author apparently believes to be rampant in the medicine of his country today.

A better than average love story runs through the book.

R. C. Mc.

CLINICAL ENDOCRINOLOGY. By Samuel A. Loewenberg, M.D., F.A.C.P., Clinical Professor of Medicine, Jefferson Medical College, Philadelphia; Assistant Visiting Physician, Jefferson Hospital; Visiting Physician, Philadelphia General Hospital, Northern Liberties Hospital, and Eagleville Sanatorium for Consumptives; Author of Diagnostic Methods and Interpretation in Internal Medicine, with foreword by Hobart A. Reimann, M.D. Cloth. Pp. 825, with 194 illustrations and 37 charts and tables. Price $8. F. A. Davis Company, 1914 Cherry Street, Philadelphia, 1937.

Dr. Loewenberg, in this book, follows the outline used for his lectures to the senior students at the Jefferson Medical College. He builds upon data gathered from American and foreign literature during the past fifteen years, from endocrinopathies studied at the hospitals with which he is connected and from cases in his private and consulting practice.

The doctor recognizes endocrinology as practically a new science and yet one marked by a voluminous literature the knowledge of which he has undertaken to concentrate and to systematize. He knows that although endocrinology deals with the diseases due to malfunction of the endocrine glands, their diagnosis, prognosis and treatment, yet it is indissolubly connected with the scientific investigations having to do with the history, the anatomy and the physiology of the ductless glands, as well as many experimental problems and their conclusions.

He considers the glands according to their anatomical positions from above downwards, giving for each a short historic sketch, anatomy, physiology, the more important researches, the specific hormones, the pathology, functional disturbances, resulting endocrinopathies, diagnosis, differential diagnosis, prognosis and treatment. There is also a chapter devoted to laboratory interpretation of service in the endocrinopathies. Each chapter ends with a bibliography.

FREE MEDICAL CARE: Socialized Medicine. Compiled and edited by E. C. Buehler, Director of Forensics, University of Kansas. Cloth. Pp. 360. Price, $2. Noble & Noble, Publishers, Inc., 100 Fifth Ave., New York City, 1936.

A book published for the use of high school debating teams on the subject of socialized medicine. A number of well-known authorities discuss the subject pro and con. As is perhaps inevitable in such a book, some strange statements appear.

SEXUAL POWER. By Chester Tilton Stone, M.D. Cloth. Pp. 172 with seven illustrations. Price, $1.50. D. Appleton-Century Company, 35 West 32nd St., New York City, 1937.

This book contains little information for the doctor. It is directed to men who fear sterility.

ROSE AND CARLESS' MANUAL OF SURGERY: American (Fifteenth) Edition. Edited by William T. Coughlin, B.S., M.D., F.A.C.S., from the Fifteenth English edition by Cecil P. G. Wakeley, D.Sc. Lond., F.R.C.S. Eng., F.R.S. Edin., and John B. Hunter, M.C., M. Chir. Cantab., F.R.C.S. Eng. Cloth. Pp. 1586, with 900 illustrations. Price, $9. William Wood and Company, Mt. Royal and Guilford Avenues, Baltimore, 1937.

The fact that we have had fifteen editions in less than forty years is sufficient proof of the popularity of this splendid work which has been translated into several foreign languages. The American edition differs from the English in that several sections relating to specialties have been omitted as not being of particular interest to the general practitioner. There is considerable new material including new chapters on "surgical shock," and "surgery of the central nervous system." The photographs and full-page colored drawings are clear and interesting and help greatly in making the book understandable and instructive.

The book begins with infections, inflammation and repair, the blood, pyogenic infections and infected wounds, ulceration, necrosis and gangrene, and specific infections. Tumors and cysts and their treatment come next. There is a good chapter on "the use of physical agencies in surgery." Deformities, orthopedic surgery, fractures, are adequately treated and the total effect is that of a good surgical text.

ALLERGY: ITS PRACTICAL APPLICATION. By J. A. Randolph, M.D., Associate Clinician in Charge of the Department of Allergy, Mt. Sinai Hospital. Cloth. Pp. 224. Price, $3.00. Dorrance and Company, Inc., 370 Drexel Bldg., Philadelphia, 1937.

This book is comprehensive yet brief. The author is, in the whole, successful in his desire "that it [this manual] contain the substance and fundamental features of allergic therapy and practice in as condensed and yet as complete a form as possible; that it present these outlines together with practical directions and hints to prepare the way for the general practitioner to treat the less complicated allergies."

The book includes general information on allergy and discusses such well-known allergic symptom complexes as asthma, hay fever, eczema, dermatitis venenata, and some of the less well understood allergic conditions.

It is a book that any physician interested in this phase of practice should have in his library.

R. E. Becker, D.O.

PHYSIOLOGY IN HEALTH AND DISEASE. By Carl J. Wiggers, M.D., Professor of Physiology in the School of Medicine of Western Reserve University, Cleveland. Second Edition. Cloth. Pp. 1,124. Price, $9.00. Lea and Febiger, Washington Square, Philadelphia, 1937.

To the student and to the physician who wants to know the "what," "why," and "how" of his everyday work, we recommend this physiology in modern textbook fashion. It is appalling to remember the commonplace physiologic processes which old-time physiologists neglected to discuss and consequently many an otherwise erudite physician finds himself at loss because suddenly he remembers that no one, teacher or author, had taught him the physiology of simple body processes. That is doubtless the real reason why students graduate lacking self-confidence and why practicing physicians fall into the error of ill-considered therapeutic procedures which a good knowledge of the body's activities would instantly have branded as unscientific. Ignorance of physiology, rather more frequently than ignorance of anatomy, has made the gullible the victim of glib salesmen who sell worthless remedies and diagnostic and therapeutic equipment.

What may be worse, ignorance of physiology has caused the physician to ignore, or to omit from his armamentarium logical, useful procedures which a freshened and intelligent conception of physiology would indicate.

With those ideas in the background, it is heartening to brouse through this book. It is written as a text for the physician and not for the laboratory technician. At least its form and content appeal to the physician. A liberal bibliography is paged conveniently, not grouped

inaccessibly. The student and writer will appreciate that feature.

If your physiology, your text or your memory, is ten years old, much of it is dangerous. Here is a text you will understand and read and refer to again and again.

R. C. Mc.

SURGICAL TREATMENT: A Practical Treatise on the Therapy of Surgical Diseases. By James Peter Warbasse, M.D., F.A.C.S., Special Lecturer in the Long Island Medical College, and Calvin Mason Smyth, Jr., B.S., M.D., F.A.C.S., Assistant Professor of Surgery in the University of Pennsylvania. In three volumes, with separate index. Second edition. Cloth. Pp. 906; 782; 798; 131, with 2,486 illustrations. Price, $35 per set. W. B. Saunders Company, West Washington Square, Philadelphia, Pa., 1937.

It has been some 18 years since the first edition of this work came out under the name of Dr. Warbasse. Many developments have come about in these years and thus it is that every section of the work has been thoroughly revised and many enlarged and completely rewritten. The authors assume that the reader of these volumes is already familiar with the fundamentals of surgical pathology and diagnosis, so they do not go far into those subjects. They consider prophylaxis as a part of pretreatment, and prognosis is so intimately associated with the results of treatment that it also is accorded as much attention as possible.

The style throughout is in the personal narrative form and an effort is made to cover as far as possible the problems met by the average surgeon. There is no attempt at introducing novelties but plastic and cosmetic surgery has its place, the surgery of the newborn, electricity and radiation, gas poisoning, etc., and there is a section on economics. Dietetics is not overlooked and thus in gastric ulcer, for instance, the whole of the therapy is given together.

The authors insist that the book is written primarily for the welfare of the patient and thus it is not out of place that the internist is advised to devote more time to post-operative care and also that he have joint charge of the patient. Much medical and therapeutic advice, not directly operative, but which is a part of the treatment in general is included.

Osteopathic physicians naturally are interested in the differences in the discussions of vertebral subluxations in the first edition and the present. In the 1919 edition we read:

"We are indebted to H. T. deForest of New York for placing this whole subject [subluxations of vertebrae] upon a scientific basis, and showing that a large category of peripheral nerve disturbances are due to such subluxations and are relieved by treatment upon this basis. He demonstrated the finer displacements . . . and applied successful treatment.

"As a result of the work of deForest many cases of 'neuralgia,' 'rheumatism,' 'lame back,' 'crick in the back,' 'stiff neck,' vague abdominal symptoms and girdle pains may be cured by looking for these slight dislocations and correcting them.

"The technic of treatment is simple. Little or no force is required. Spontaneous reduction often takes place.

"Slight traction upon the spine is made, either by the hands or with the suspension apparatus, the patient sitting upright in a chair. While traction is made, corrective manipulation is applied to the displaced vertebra. When the bone slips into place, which it often does with a snap, the patient feels a sense of relief from the pressure upon the spinal nerve trunk. In some cases no displacement is palpable, but empiric pressure and manipulation cause relief of the symptoms. In such cases, deForest employed vibratory massage in connection with tractions."

In the new edition we read, instead:

"Subluxations of vertebrae occur in all parts of the spine and in all degrees. When the dislocation is so slight as not to affect the spinal cord, it will still produce disturbances in the spinal nerves, passing off through the spinal foramina. The dominant teaching has been that dislocations were gross lesions, causing pressure upon the cord, easily palpable, and with a high mortality. Blasius (1869), showed that slight dislocations occurred, which presented but slight symptoms. Then nearly half a century elapsed, during which time a pseudoscience sprang up as a result of the scientific neglect of the common subluxations. It is true that these may produce certain symptoms, but it is not reasonable to ascribe to them conditions in remote parts of the body and to expect cure to follow simple correction. Neither is it reasonable for the medical profession to dismiss the entire matter with unequivocal condemnation. The value of manipulative procedures has not been fully appreciated. The surgeon should carefully investigate such methods and apply them where they are indicated."

CUNNINGHAM'S TEXTBOOK OF ANATOMY. Edited by J. C. Brash, M.A., M.D., F.R.C.S. Ed., Professor of Anatomy, University of Edinburgh, and E. B. Jamieson, M.D., Lecturer on Anatomy, University of Edinburgh. Cloth. Seventh Edition. Pp. 1506, illustrated by 1171 text figures, 653 of which are printed in colors, and 76 plates including 121 radiographs. Oxford University Press, New York City, 1937.

Of the original staff who produced Cunningham's Anatomy thirty-five years ago not one is now living though one did live long enough to prepare a section for this work. Also Professor Robinson who edited the work for nearly a quarter of a century has now retired, but read some of the proofs of this edition.

The present book uses the B.A. nomenclature adopted by the Anatomical Society of Great Britain and Ireland in 1933. It opens with a glossary showing in parallel columns the B.R., the Latin Form of B.R., the B.N.A., and the N.K. nomenclatures and throughout the book where the B.N.A. and the B.R. differ radically the former is given in brackets after the latter.

There are a few less pages than in the last previous edition, and, as usual, the less important matter appears in smaller type. A few innovations have been introduced in connection with the illustrations. Roentgenograms are used to illustrate bones and joints and also the injected renal pelves and calyces and the intestinal tract. The muscular system is much more understandable because of the photographs of parts of the living body in action. Some attention has been given to anatomy in the living.

As was true in previous years, Cunningham's Anatomy is a good text.

THE FACIAL NEURALGIAS. By Wilfred Harris, M.D. (Cantab.), F.R.C.P., Consulting Physician to St. Mary's Hospital, and Physician to the Hospital for Epilepsy and Paralysis, Maida Vale. Cloth. Pp. 105. Price, $2.75. Oxford University Press, London, 1937.

This is one of the best books on the subject in print. It is a detailed attempt at classification and differential diagnosis of facial pain. Among the subjects discussed are: dental neuralgia, neuralgia from ocular causes, trigeminal tic, migrainous neuralgia, physiology of sensory conduction from the face, sympathetic sensory conduction, traumatic neuritis of the trigeminal and its branches, postherpetic trigeminal neuralgia, tumors of facial bones, nasopharynx and base of the skull, medullary sclerosis, geniculate neuralgia, facial psychalgia, headache and facial neuralgia in sinusitis, chronic neuralgia of the jaws, temple, side of head and neck, and glossopharyngeal tic.

THE METABOLISM OF LIVING TISSUES. By Eric Holmes, M.A., M.D., Fellow and Tutor of Downing College and University Lecturer in Biochemistry. Cloth. Pp. 235. Price, $2.25. Macmillan Company, 60 Fifth Ave., New York City, 1937.

A small, closely printed volume of sound, scientific information clearly presenting the significant relations between chemical structure and physiological action. The chapter headings include oxidations, oxidation-reduction potential, nitrogen metabolism, metabolism of carbohydrate and fat, the kidney, the liver, voluntary and cardiac muscle, the nervous system, the correlation of the metabolism of different tissues, the hormones, the influence of some inorganic substances, and the vitamins.

ILLUSTRATIVE ELECTROCARDIOGRAPHY. By the late Joseph H. Bainton, M.D., formerly attending physician and chief of the Cardiac Clinic, Morrisania City Hospital, New York; and consulting physician, St. John's Long Island City Hospital, and Julius Burstein, M.D., associate electrocardiographer, Morrisania City Hospital; and cardiologist to St. Elizabeth Hospital, New York City. Cloth. Pp. 258. Price $5. D. Appleton-Century Company, 35 West 32nd Street, New York City.

This monograph has been planned especially for the general practitioner and therefore contains little of theoretical consideration but rather reports of 7,500 cases obtained from hospital patients over a period of five years. It includes 100 full-page plates showing 155 electrocardiograms. Opposite each plate is a description and the records have been presented in a graded sequence from normal to abnormal and from simple to more complicated phenomena. The effects of various drugs are demonstrated graphically in series. Several acute infections are followed through by means of electrocardiograms. Coronary occlusion is closely checked by series of records representing time intervals ranging from one month to more than five years.

PRACTICAL PHYSIOLOGICAL CHEMISTRY. By Philip B. Hawk, M.S., Ph.D., President of the Food Research Laboratories, Inc., New York City; and Olaf Bergeim, M.S., Ph.D., Associate Professor of Physiological Chemistry, University of Illinois, College of Medicine, Chicago; in collaboration with Bernard L. Oser, Ph.D., and Arthur G. Cole, Ph.D. Eleventh Edition. Cloth. Pp. 968, with seven plates and 281 illustrations. Price, $8. P. Blakiston's Son and Company, Inc., 1012 Walnut St., Philadelphia, 1937.

For thirty years, this book has been a standard text for students taking courses in physiological chemistry. This latest edition has been thoroughly revised to keep pace with the rapidly developing science of biochemistry. The chapters rewritten include those on Vitamins and Deficiency Diseases, Enzymes and Their Action, Endocrine Organs, Protein Metabolism, Fat Metabolism, Carbohydrate Metabolism, Inorganic Metabolism, Salivary Digestion, Gastric Digestion, Pancreatic Digestion, Intestinal Digestion, Bile, Putrefaction and Detoxication, Blood and Tissue Analysis, and Teeth.

R. E. D.

SHADOW ON THE LAND—SYPHILIS. By Thomas Parran, M.D., Surgeon General of the United States Public Health Service. Cloth. Pp. 309. Price, $2.50. Reynald & Hitchcock, Inc., 386 Fourth Ave., New York City, 1937.

Dr. Parran speaks of syphilis not particularly as it affects the individual but rather as to its impact upon the nation and its relationship to contemporary public health and other public problems. He believes that man has the capacity to work out a civilized solution to the problems arising from all modern civilization; that the present situation as to venereal diseases is one of those problems and that there will be a real national gain from the spread of the syphilis control movement through the states. He expresses the belief that 50 per cent of all syphilitic infections are acquired innocently and says that because of traditional taboos many are not recognized in the curative stages; that many are treated by quacks or the incompetent, and that most of them appear under other names in death certificates. The book is addressed to the public, but physicians will read with interest that Dr. Parran believes about what he calls "the most urgent public health problem of this country today."

It is indeed unfortunate that a man in Dr. Parran's position should allow to go out under his name the following sentence which appears on page 251: "In Wisconsin the value of a certificate is attenuated . . . by the fact that an osteopath may make the examination." Most or all of the states requiring certificates of freedom from venereal disease as a condition of the issuance of a marriage license recognize the rights of osteopathic physicians to issue such certificates. The condition is not confined to Wisconsin. One wonders what Dr. Parran thinks of the attenuation of the value of birth and death certificates from all over the United States made by osteopathic physicians and with which his department has so much to do.

Communications

Tropical Diseases

To the Editor:

I feel that attention should be called to the increasing necessity for study of tropical diseases because with the constantly increasing development in aviation we have more travel to tropical countries with the accompanying changes in food, clothing, and air and contact with tropical vegetation and tropical parasites. These things make it necessary for us to recognize these diseases through familiarity with their symptoms.

It is not enough to recognize them. As fast as there is any development in a knowledge of what osteopathy will do in such conditions, this knowledge should be disseminated to the profession. I have in mind a recent patient of mine, a young man from Glasgow, Scotland, who, when a youngster, ran barefooted and evidently scratched himself on a plant which a neighbor of his, a retired British soldier, had brought from India and planted in his garden. From this scratch he acquired a disease which is common in India and is met with occasionally in Africa and the West Indies, yet his case seems to have been the only one on record in England. The result of the disease was amputation of his foot.

What I should like to know is: What could osteopathy have accomplished What provisions have we made to deal with diseases of this nature No matter how well we understand the fundamental principles of osteopathy, what do we know of its application in rare conditions?

I feel that it is the duty of every osteopathic physician who applies osteopathic treatment in unusual conditions to submit for publication the fullest possible reports, no matter whether the results are encouraging or whether they are totally negative.

(Signed) CARL E. ROTHROCK, D.O.
148 E. Market St.,
Lewiston, Pa.

State Boards

Arizona

Charles C. Bradbury, Phoenix, was reappointed for six years, the term ending November 1, 1943.

Florida

The next examinations will be held at Miami, February 24-26. Application blanks may be obtained from Arthur G. Chappell, Secretary, 461 St. James Bldg., Jacksonville.

Illinois

The next examinations will be held on January 25-27. For further information address Oliver C. Foreman, 58 East Washington St., Chicago.

Iowa

The Iowa Board of Examiners in the Basic Sciences will conduct a written examination at the State Capitol, Des Moines, on January 11 at 9:00 a.m. Address E. A. Benbrook, V.M.D., Secretary, Iowa Basic Science Board, c/o Iowa State College, Ames.

The next examinations before the Iowa state board of Osteopathic Examiners will be held at the State Capitol Building, Des Moines, January 24-26. For applications or other information, address D. E. Hannan, Secretary, 202 Bruce-McLaughlin Building, Perry.

Maryland

Evelyn C. Luke, Hagerstown, was reappointed for a three-year term, ending June 1, 1940.

Michigan

The next examinations will be held at Lansing, February 1-3. Applications must be in the secretary's hands by January 15. Claude B. Root, 420 S. Lafayette St., Greenville, is the secretary.

Minnesota

E. C. Herzog, Brainerd, has been appointed for a five-year term, ending January 4, 1942, taking the place of K. Janie Manuel, Minneapolis.

Missouri

The next examinations will be held at the Kirksville College of Osteopathy and Surgery and the Kansas City College of Osteopathy and Surgery, January 26-28.

New York

Charles Hazzard, New York City, has been reelected vice president of the State Board of Medical Examiners.

Vermont

The next examinations will be held at Montpelier, February 3 and 4. For further information write to R. L. Martin, secretary, 24 Elm St., Montpelier.

West Virginia

The next examinations will be held at the offices of Harwood James, New Lilly Bldg., Beckley, February 14 and 15. Application blanks may be secured from the secretary, Guy E. Morris, 542 Empire Bank Bldg., Clarksburg. Applications should be filed not later than February 1.

Conventions and Meetings

Announcements

American Osteopathic Association, Forty-Second Annual Convention, Netherland Plaza Hotel, Cincinnati, July 11-15. Program chairman, R. McFarlane Tilley, New York City.

American College of Osteopathic Surgeons, Cleveland. Program chairman, E. G. Drew, Philadelphia.

American Osteopathic Society of Proctology, Marietta, Ohio, July 8, 9; Cincinnati, July 11-14. Program chairman, R. O. Buck, Toledo.

Arkansas state convention, Little Rock, May. Program chairman, Charles A. Champlin, Hope.

California midwinter meeting, Senator Hotel, Sacramento, January 27-29; state convention, Hotel Del Coronado, San Diego, June 8-11. Program chairman, Hoyt F. Martin, South Pasadena.

Connecticut state convention, Hotel Bond, Hartford, January 30.

Eastern Osteopathic Association, Hotel Pennsylvania, New York City, April 2, 3. Program chairman, F. Gilman Stewart, New York City.

Florida state convention, Mt. Dora, May 16-18. Program chairman, G. C. Richardson, Mt. Dora.

Georgia state convention, Hotel Dempsey, Macon, May 20, 21. Program chairman, D. C. Forehand, Albany.

Idaho state convention, Pocatello, June. Program chairman C. R. Whittenberger, Caldwell.

Illinois state convention, Hotel Nelson, Rockford, May 17-19. Program chairman, C. E. Medaris, Rockford.

Indiana state convention, Indianapolis, October.

Iowa state convention, Hotel Savery, Des Moines, May 3, 4. Program chairman, Laura E. Miller, Adel.

Kansas state convention, Iola. Program chairman, Frank W. Shaffer, Salina.

Kentucky state convention, Lexington, October 13, 14. Program chairman, Nora Prather, Louisville.

Louisiana semiannual state convention, New Orleans. April. Program chairman, W. Luther Stewart, Alexandria.

Maryland state convention, Baltimore, May.

Massachusetts state convention, Hotel Kenmore, Boston, January 15. Program chairman, Charles W. Sauter, II, Gardner.

Middle Atlantic States Osteopathic Association, Asheville, N. Car., September.

Minnesota state convention, Minneapolis, May 6, 7.

Missouri state convention, Hannibal. Program chairman, F. W. Zuspan, Flat River.

Montana state convention, Billings.

Nebraska state convention, North Platte, September. Program chairman, H. A. Fenner, North Platte.

New England Osteopathic Association, Hotel Statler, Boston, Mass., April 29, 30. Program chairman, Orel F. Martin, Boston.

New Hampshire state convention, Concord, first week of May. Program chairman, C. S. Garran, Rochester.

New York state convention, Binghamton, October 8, 9. Program chairman, J. James Grace, Binghamton.

Ohio state convention, Marietta, May 15-17.

Oklahoma state convention, Ponca City, April 13, 14. Program chairman, D. W. Streitenberger, Ponca City.

Oregon state convention, Le Grande, June. Program chairman, Fred S. Richards, Forest Grove.

Pennsylvania state convention, October.

Society of Thermogenic Therapy, Parkway Hotel, Chicago, first week in April.

South Dakota state convention, Huron, May.

Southwestern Internist Conference, Tulsa, Okla.

Vermont state convention, St. Johnsbury, October. Program chairman, Kenneth P. Wheeler, Brattleboro.

West Virginia state convention, Huntington, May 9-11.

Official and Affiliated Organizations

CALIFORNIA

State Association

The midwinter meeting will be held at the Senator Hotel, Sacramento, January 27 to 29. The following scientific program is to be presented: "Arthritis and Rheumatoid Ailments," Ray L. Carey, Oakland; "Appendicitis or Pyelitis, Which?" William T. Barrows, Oakland; "College Affairs," Carle H. Phinney, Los Angeles; "Legislation," Glen D. Cayler, Los Angeles; "The New Department of Ethics and Censorship," W. W. Vandenburgh, San Francisco; "Sterility," Charles R. Poitevin, Long Beach; "Artificial Fever in the Armamentarium of the Osteopathic Physician," Edward I. Kushner, Oakland; "Points on Routine Examination," Lester R. Daniels, Sacramento; "Antepartum Care of the Pregnant Mother," J. W. Haworth, Woodland; "Student Recruiting," H. E. Litton, Los Angeles; "Illustrated Technic," A. V. Dunn, Sacramento; "Association Activities," Walter W. Hopps, Jr., Los Angeles; "The Below-Par Child," Lily G. Harris, Oakland; "The Pathology of the Chronic Ear," John R. Morris, Oakland; "Some Proctological Suggestions," Paul K. Theobald, Oakland; "Speech Disorders and the Physician," Fleda M. Brigham, South Pasadena; "Intravenous Therapy," Jack Goodfellow, Oakland; "Presurgical Considerations," B. Tardieu, Oakland; "Advances in Anesthesia," John S. Stratton, Alhambra; "Medico-Legal Angles," John L. Brannely, Attorney-at-Law, Sacramento; "The Work in Scottish Osteopathic Research Institute," Capt. F. Plew, Edinburgh, Scotland; Technic in the Los Angeles County Osteopathic Hospital," James L. Conley, Los Angeles; "Illustrated Technic," Ernest Sisson, Oakland.

Hollywood Osteopathic Luncheon Club

On November 2 Bruce S. Collins, Santa Monica, spoke on "Feet"; on November 9 Lorenzo D. Whiting, Los Angeles, talked on "Thyroid-Ovarian Problems"; on November 16 John E. Rogers, Oshkosh, Wis., was a guest speaker and Thomas C. Morris, Los Angeles, demonstrated osteopathic manipulative technic; on November 23 Dr. Lawrence Nossaman, a laboratory technician, spoke on "Blood Count."

Long Beach Branch

On November 17 Robert Dudley Emery, Los Angeles, gave a lecture entitled "Around the World in Medicine," and Bruce E. Waller, Long Beach, spoke on "Nephritis."

Los Angeles Osteopathic Surgical Society

On December 6 Carle H. Phinney, Los Angeles, spoke on "Head Injuries." Robert Rough, Los Angeles, discussed proposed plans for raising the standards of membership in the society.

Pasadena Branch

On December 16 John S. Stratton, Alhambra, spoke on "Your Questions About Anesthesia Answered."

San Joaquin Valley Branch

The January meeting is to be held on the 16th at Bakersfield. Carl W. Johnson, Taft, will speak on "Undulant Fever and San Joaquin Valley Fever."

San Jose Branch

On November 13 at Redwood City, Harrison H. Fryette, San Mateo, was the principal speaker.

Southwest Osteopathic Luncheon Club

On November 10, at Los Angeles, Thomas W. McAllister, Los Angeles, spoke on "The Interpretation of Blood Dyscrasias."

FLORIDA

Central Florida Osteopathic Association

On November 20 at Gainesville, C. A. Ball, Eustis, read a paper on "Osteopathic Care of Acute Bronchitis and Coryza," and Harrison R. McMains, Orlando, read one on "Osteopathic Care of the Pneumonias."

Pinellas County Osteopathic Society

The following officers were elected in November: President, Hunter R. Smith; vice president, James A. Stinson; secretary-treasurer, Earl E. Osborn, all of St. Petersburg. The following committee chairmen have been appointed: Censorship, Calvin Eroh, St. Petersburg; publicity and convention program, Dr. Stinson.

IDAHO

Boise Valley Osteopathic Society

On November 18 at Boise, Sol Catron, Payette, was the principal speaker.

At Parma, December 16, Ernest O. Bauman, Boise, spoke on "The Cerebral Parasympathetics."

ILLINOIS

Chicago Osteopathic Association

On December 2 Russell P. Armbruster, Pontiac, spoke on "Organized Osteopathy," R. N. MacBain, Chicago, on "Present Status of Manipulative Therapy," and S. V. Robuck, Chicago, demonstrated technic.

Chicago—South Side Osteopathic Physicians' Society

On December 2, Ray G. Hulburt, Chicago, Editor of the American Osteopathic Association, spoke on "Local Publicity." On December 9 Frank C. Brandenburg, Chicago, spoke on "Diabetes Insipidus," and on December 16, Howard M. Heffelfinger, Chicago, spoke on "Diabetes Millitus."

Second District Osteopathic Association

The following officers were elected on October 7: President, B. J. Snyder, Fulton, reelected; vice president, C. O. Johnson, Rochelle; secretary-treasurer, H. G. Arfstrom, Rockford, reelected. The following committee chairmen have been appointed: Membership, N. W. Shellenberger, Rockford; professional education, W. A. McClimans, Sycamore; hospitals, Ralph E. Curry, Sycamore; censorship, Dr. Johnson; student recruiting, Stanley J. Adamson, Rockford; public health and education, C. H. Gourdier, Freeport; industrial and institutional service, H. Schreck, DeKalb; clinics and displays at fairs and expositions, C. E. Medaris, Rockford; publicity, Allen H. Miller, Rockford; statistics, C. Z. Renk, Harvard; convention program and arrangements, R. B. Hammond, Rockford; legislation, W. O. Medaris, Rockford; professional development, H. P. Wise, Rockford.

INDIANA

Northeastern Indiana Osteopathic Association

On November 10, T. K. Arbuthnot and Fred L. Swope, both of Richmond, were guest speakers.

Northern Indiana Osteopathic Association

A joint meeting was held on December 15 with the Southwestern Michigan Osteopathic Association. The annual Christmas party was held.

The following officers were elected on October 20: President, Olaf H. Olsen; vice president, A. Cleland; secretary-treasurer, E. B. Porter, all of South Bend. The following committee chairmen were appointed: Membership, Frank E. Doddridge; censorship, L. A. Rausch; public health and education, Carlisle K. Parker; clinics, F. A. Turfler; publicity, H. E. Forster; statistics, Dr. Porter; convention program, John H. Egan; convention arrangements, C. W. Odell; legislation, E. J. Summers; displays at fairs and expositions, S. Borough, all of South Bend; and professional development, J. C. Gulmyer, Elkhart; studio recruiting, L. P. Ramsdell, La Porte; industrial and institutional service, E. O. Peterson, La Porte; professional education, V. B. Wolfe, Walkerton; hospitals, Ernest B. Decker, Goshen.

KANSAS

Eastern Kansas Osteopathy Society

At Ottawa, December 9, Margaret Jones, Reginald A. Murren, both of Kansas City, Mo., assisted by six senior students of the Kansas City College of Osteopathy and Surgery, spoke on and demonstrated with a manikin obstetrical deliveries. J. L. Jones, Kansas City, Mo., lectured on "Inoculations."

The January meeting is to be held at Iola on the 13th.

North East Kansas Osteopathic Association

At Sabetha, November 3, George Noll, Seneca, discussed "Osteopathic Technic," and Clyde W. Mayhugh, Atchison, talked on "Finger Surgery."

South Central Kansas Osteopathic Society

On November 18, at a joint meeting with the Kay County (Okla.) Osteopathic Association. Earl C. Logsdon, Sedan, spoke on "Chorea, Its Causes and Treatment," and A. L. Quest, Augusta, on "Diseases of the Gallbladder."

Southern Kansas Osteopathic Association

The officers were reported in THE JOURNAL for November. The following committee chairmen have been appointed: Membership, R. R. Wallace, Caldwell; professional education, J. A. Howard, Anthony; hospitals, K. A. Bush, Harper; censorship, W. H. Youle, Wellington; student recruiting, Robert C. Craig, Argonia; public health and education, Charles E. Mitchell, Kiowa; industrial and institutional service, F. L. Barr, Arkansas City; clinics, Christy V. Moore, Medicine Lodge; publicity, Burr Lacey, Pretty Prairie; statistics, F. M. Stromberg, Cunningham; legislation, J. B. Donley, Kingman; professional development, F. D. DeOgney, Norwich.

Southwestern Kansas Society of Osteopathic Physicians and Surgeons

At Hutchinson, November 16, W. S. Childs, Salina, discussed "Professional Cooperation," Frank W. Shaffer, Salina, spoke on "Obstetrics in the Home," and H. B. Syler, Langdon, on "Some Problems and Experiences of a Country Practice."

KENTUCKY

State Association

The officers were reported in THE JOURNAL for December. The following committee chairmen have been appointed: Membership, C. H. Robertson, Owensboro; professional education, Martha Garnett, Louisville; hospitals, O. C. Robertson, Owensboro; censorship, E. W. Patterson, Louisville; student recruiting, C. W. Barnes, Louisville; public health and education, C. E. Pollock, Whitesville; industrial and institutional service, R. L. Whipple, Owensboro; clinics, C. R. Blackburn, Henderson; publicity, Stanley G. Bandeen, Louisville; statistics, Martha D. Beard, Hopkinsville; convention program, Nora Prather. Louisville; convention arrangements, R. Evelyn Alvord, Lexington; legislation, Carl J. Johnson, Louisville; professional development, L. B. Montgomery, Winchester.

LOUISIANA

State Society

The officers were reported in THE JOURNAL for December. The following committee chairman have been appointed; Membership, A. E. Stanton, Crowley; professional education and convention programs, W. Luther Stewart, Alexandria; censorship, Paul W. Geddes, Shreveport; industrial and institutional service, James A. Keller, Jennings; publicity and public and professional welfare, Carl E. Warden, Lake Charles; statistics, Coyt Moore, Baton Rouge; legislation, Henry Tete, New Orleans; professional development, J. R. Kidwell, Baton Rouge.

Southwest Louisiana Osteopathic Association

At Jennings, December 11, W. Luther Stewart, Alexandria, gave a paper on "The Diagnosis and Treatment of Pulmonary Influenza," and Coyt Moore, Baton Rouge, on "Heart Affectations."

MAINE

York County Osteopathic Society

At Saco, November 25, Dr. Laurence P. Bennett, laboratory diagnostician of the Maine Osteopathic Hospital at Portland, spoke about his work at the hospital. Royal A. McWilliams, Portland, also spoke on his work at the same institution.

MASSACHUSETTS

Essex County Osteopathic Society

The following officers were elected in November: President, E. Bradford Whiting, Lynn, reelected; vice president, W. W. Fessenden, Beverly, reelected; secretary A. W. Nicosia, Lynn; treasurer, Herbert R. Hewson, Lynn. The following committee chairmen have been appointed; Membership, Frank W. Laroe, Beverly; student recruiting, R. S. Dunn, Salem; publicity, Dr. Hewson; legislation, J. Harold Evers, Lynn.

Middlesex South Osteopathic Society

At Newton, December 2, Herbert H. Pentz, Winchester, spoke on "The Eye in General Practice."

Worcester District Osteopathic Society

At Worcester, December 1, Victor S. Stedman outlined and explained some new adjuncts in therapy.

MICHIGAN

Northeastern Michigan Association of Osteopathic Physicians and Surgeons

At Saginaw, November 10, Donald B. Sheets, Detroit, spoke on "Hypertrophy of the Prostate Gland."

Southwestern Michigan Osteopathic Association

(See also Northern Indiana Osteopathic Association)

At Dowagiac, November 11, Beatrice W. Phillips, Hamilton, Ohio, was the principal speaker.

MINNESOTA

Minneapolis Osteopathic Society

On December 1 a birthday party was given for Dwight J. Kenney, who is believed to be the oldest practitioner in the United States. August J. Pacini, Minneapolis, spoke on "Vitamins."

MISSOURI

Northeast Missouri Osteopathic Association

At Quincy, Ill., November 11, R. P. Armbruster, Pontiac, Ill., spoke on "State and National Organizations," and Harold N. Fitch, Bushnell, Ill., lectured on "Diagnosis Pitfalls," illustrating his talk with x-ray films.

The December meeting was scheduled to be held at Kirksville on the 9th.

St. Louis Osteopathic Association

On December 14 Miss Emilie G. Robson, Director of the St. Louis Visiting Nurses Association was scheduled to speak on "The Services Rendered by the St. Louis Visiting Nurses Association," and Mrs. H. C. Packard, former instructor in the School of Laboratory Technic, spoke on "Laboratory Technic."

West Central Missouri Osteopathic Association

At Sweet Springs, December 2, Leland S. Larimore, Kansas City, talked on "Diagnosis and Treatment of Sinus Conditions," and L. A. Marty, Kansas City, talked on "X-Ray as a Specialty."

The January meeting is to be held at Clinton on the 20th.

The committee chairmen were reported in THE JOURNAL for December. Changes in committee chairmen have taken place and the following named doctors now head the committees indicated: Hospitals, J. W. Pinkston; publicity, G. E. Darrow, Independence; public relations, E. H. Owen, Harrisonville; student recruiting, J. C. Beltram, Wellington.

NEBRASKA

State Association

The committee chairmen were reported in THE JOURNAL for December. The following committee chairmen are to be added: professional education, M. Mary JoDon, Lincoln; censorship, P. F. Kani, Omaha; public health and education, J. M. Edmunds, Fairbury; clinics, H. R. Shickley, Lincoln; convention arrangements, H. A. Fenner, North Platte; professional development, Dr. JoDon.

Lincoln District Osteopathic Association

The following are the present officers: President, E. H. Frech; vice president, Joseph M. Smith; secretary-treasurer, M. Mary JoDon, all of Lincoln.

NEW JERSEY

Camden County Osteopathic Society

At Camden, December 15, the New Jersey State Board of Medical Examiners were guests of honor at a dinner meeting.

Hudson County Osteopathic Society

At Bayonne, November 11, W. H. Wiggins, Boonton, spoke on "Diagnosis and Treatment of Unusual Fractures."

NEW MEXICO

Central New Mexico Osteopathic Association

At Santa Fe, December 4, C. E. Hoermann, Mountainair, discussed "Osteopathic Treatment of Asthma and Tic Douloureux."

The following officers were elected: President, Paul V. Wynn, Albuquerque; vice president, Dr. Hoermann; secretary-treasurer, Mildred Lethem, Albuquerque.

NEW YORK

Central New York Osteopathic Society

At Syracuse, November 24, a symposium on athletic injuries was presented by Patrick H. O'Hara, William E. Kaufmann, and Francis J. Beall, Jr., all of Syracuse.

Hudson River North Osteopathic Society

At Glens Falls, November 16, A. W. Bailey, Schenectady, spoke on "State Organization," and Mary Stearns, Saratoga Springs, and John R. Pike, Albany, discussed the New York State Convention.

The following officers were elected: President, Howard A. Dark, Glens Falls; vice president, Dr. Stearns; secretary-treasurer, L. C. Hall, Schenectady. The following committee chairmen have been appointed: Membership, Helen J. Beatty, Schenectady; publicity, M. B. Hasbrouck, Albany; program, Dr. Pike.

At Albany, December 11, a district representative for the Spirella Corset Company, demonstrated corset fitting.

Nassau County Osteopathic Society

At Lynbrook, December 1, a discussion was conducted on osteopathic manipulative procedures.

Osteopathic Society of the City of New York

On December 18 H. Van Arsdale Hillman, New York City, spoke on "Foot and Foot Balance."

The January meeting is scheduled to be held on the 15th.

Westchester Osteopathic Society

On December 1, at White Plains, Dr. Andrea Saccone, Pathologist at the Metropolitan Hospital, New York City, spoke on "Laboratory Diagnosis and Interpretation."

The following are the present officers and committee chairmen: President, K. Wallace Fish, Mt. Kisco; vice president, George J. Schoelles, Bronxville; secretary-treasurer, Ernest M. Hunt, White Plains; Sergeant-at-arms, Oskar Knodt, Ossining; program, A H. Leeds, Yonkers; membership, C. B. Hoff, Bronxville; legislation, W. B. Ensinger, Pelham Manor; vigilance, W. O. Kingsbury, Rye; publicity, Barbara Redding, Larchmont.

Western New York Osteopathic Association

The following are the present officers: President, H. Clifford Wilson, Niagara Falls; vice president, Edith E. Dovesmith, Niagara Falls; secretary, Chauncey B. Sturgess, Hamburg; treasurer, L. S. Gary, Buffalo. Dr. Gary is also legislative chairman.

OHIO

Ashtabula Osteopathic Society of Physicians and Surgeons

On December 8 the following officers were elected: President, W. R. Westfall, Ashtabula; vice president, M.

W. Poore, Andover; secretary-treasurer, J. M. Hutchinson, Geneva, reelected.

Trumbull County Osteopathic Society

The following officers were elected on November 30: President, H. H. Storey; vice president, W. H. Mills; secretary-treasurer, L. E. Sowers, reelected, all of Warren.

First (Toledo) District Osteopathic Society

On December 6, H. V. Halladay, Des Moines, Iowa, spoke on "The Coach, The Physician, and The Team."

Second (Cleveland) District Osteopathic Society

On December 1 at Sandusky, Edward C. Wiegand, Sandusky, spoke on his experiences as an intern at the Detroit Osteopathic Hospital.

Third (Akron) District Osteopathic Society

On December 6 H. V. Halladay, Des Moines, Iowa, spoke on "Osteopathic Technic and Treatment of Hypo- and Hypertension."

Fifth (Dayton) District Osteopathic Society

On December 10, H. V. Halladay, Des Moines, spoke on "The Coach, the Physician, the Team."

OKLAHOMA

Central Oklahoma Osteopathic Association

At Chandler, November 6, Robert Atchison and John Halladay, both of Tulsa, were the guest speakers.

At Okmulgee, November 27, a joint meeting was held with the Eastern Oklahoma Osteopathic Association. John E. Halladay, Tulsa, spoke on "Fractures and X-Rays."

Eastern Oklahoma Osteopathic Association

(See Central Oklahoma Osteopathic Association.)

Kay County Osteopathic Association

(See South Central Kansas Osteopathic Society).

South-Central District of Oklahoma Osteopathic

At Anadarko, November 16, W. J. Rouse, Norman, spoke of the experiment going on at the Oklahoma University on dementia praecox, and George Gauger, Rush Springs, spoke on "Obstetrics."

Perry H. Corbin, Anadarko, was elected president and A. A. Choquette, Chickasha, reelected secretary.

OREGON

Southern Oregon Osteopathic Society

The officers were reported in THE JOURNAL for December. Russell R. Sherwood, Medford, was appointed publicity chairman.

PENNSYLVANIA

Central District Osteopathic Society

The following officers were elected at Harrisburg on November 28: President, George B. Stineman, Harrisburg; vice president, J. Paul Spanogle, Chambersburg; secretary, Harry M. Leonard, Harrisburg, reelected; treasurer, Phineas Dietz, Harrisburg, reelected.

Lehigh Valley Osteopathic Association

On November 11 at Bethlehem, Ellis H. Medford, New Holland, spoke on "Rectal Conditions, Diagnosis and Treatment."

North Central Pennsylvania Osteopathic Association

At Williamsport, November 18, George S. Rothmeyer, Philadelphia, spoke on "Treatment on Correction of Fallen Arches."

SOUTH DAKOTA

Northeastern South Dakota Osteopathic Association

At Brookings, November 14, C. M. Parkinson, Highmore, and M. W. Meyers, a member of the State Board of Health, were the principal speakers.

TENNESSEE

East Tennessee Osteopathic Society

The following are the present officers: President, James S. Blair, Kingsport; secretary-treasurer, Alberta Johnson, Knoxville.

TEXAS

Dallas County Osteopathic Association

At Dallas, December 9, Mary G. Bedwell, Dallas, presented a case of history on "Muscular Atrophy," and a round table discussion was conducted.

WASHINGTON

King County Osteopathic Association

(See also Pierce County Osteopathic Society)

At Seattle, November 11, a meeting was held

Pierce County Osteopathic Society

At Tacoma, November 9, Merrill Thomas, Tacoma, demonstrated a blood pressure machine.

A joint meeting was held with the King County Osteopathic Association on December 9.

WISCONSIN

Fox River Valley District Society of Osteopathic Physicians and Surgeons

At Oshkosh, December 7, a salmon dinner was served, the fish coming from the Washington Osteopathic Association.

The January meeting is to be held on the 13th at Manitowoc.

Madison District Osteopathic Association

At Janesville in December, W. O. Medaris, Rockford, Ill., spoke on "Pneumonia," P. Koogler, Hustisford, on "Nephritis," R. B. Gordon, Madison on "Scientific Meals for Children," and H. R. Bullis, Milwaukee, "Physiotherapy for Knees and Shoulders."

Northwest District Osteopathic Association

The following are the present officers: President, W. L. Madson, Rhinelander; vice president, J. J. Van de Grift, Wausau; secretary-treasurer, B. J. Heian, Knapp.

CANADA

Ontario Academy of Osteopathy

The fall meeting was held at Royal York Hotel, Toronto, on November 22. The following program was presented: "Cardiac Diagnosis," Hilkka Hormavirta, Toronto; "Athletic Injuries," J. J. O'Connor, Toronto; "Vesical Calculi," J. E. Wilson, Barrie; "Lesion Pathology," John S. Adair, Peterborough; "Posture," L. E. Jaquith, Toronto; "Sinus Drainage," N. J. Neilson, Toronto; "Discussion on Poliomyelitis," E. S. Detwiler, London; "Short Leg," Allan A. MacKenzie, Kitchener; "Influenza," Eric Johnston, Toronto.

Special and Specialty Groups

California Osteopathic Neuropsychiatric Society

An organization meeting was held on November 30 at Los Angeles. The purpose of this organization is primarily to advance the aims of scientific neuropsychiatry in the osteopathic profession and to protect qualified and well-trained specialists from the claims of self-styled and poorly informed pretenders in the field. It was decided that inasmuch as the present membership is working in the Los Angeles County Osteopathic Hospital, the various men would delve into the wealth of statistical material and use the neuropsychiatric clinics there to establish data and support for our osteopathic philosophy. This society hopes to stabilize concepts and to be a source of reliable information. All publications by its members must have the approval of the Board of Standards of the organization. Associate members are required to present some original work in neuropsychiatry and to show evidence of at least one year of satisfactory training background before being admitted to full membership. At this meeting preliminary work was done to establish a College of Osteopathic Neuropsychiatrists giving a degree of M.C.O.N. to its members.

E. S. Merrill was elected president, T. J. Meyers, secretary, and K. Grosvenor Bailey and Drs. Meyers and Merrill, all of Los Angeles, and Walter B. Hubach, Van Nuys, make up the Board of Standards.

What's New With the Advertisers

ORGANON HORMONE PRODUCTS

Hoffman-La Roche, Inc., announce the formation of The Roche-Organon Company, a new company which will undertake the manufacture and distribution of the world-famous Organon hormone products in America. Plans were recently completed in The Hague for this collaboration of the Organon Laboratories of Holland with Hoffman-La Roche, Inc., of Nutley, New Jersey, which will make hormonal therapy available to American physicians on a hitherto unattainable scale.

Dr. Louis Klein, of the medical staff of Hoffman-La Roche, has supplied the answer to the thousand and one questions that have poured into Roche Park amidst an avalanche of congratulations:

"Tremendous developments of far-reaching practical importance have come out of endocrine research laboratories during the past five years, and it is not a hazardous prediction to say that the future of therapeutic progress will be largely tied up with advances in our knowledge of endocrine physiology and the proper therapeutic use of hormone preparations. Roche naturally wants to be identified with this important scientific development, very much in the same way as it has already carved for itself an enviable place in the research developments in the field of hypnotics, sedatives, digitalis, vitamins, and other chemotherapeutic lines. It is for this reason that we have felt that our line of high-grade therapeutic agents as well as our service to the medical and pharmaceutical professions could be enhanced and rounded out by the addition of a complete line of dependable, scientific, hormone preparations.

"It didn't take long to establish the fact that the name 'Organon' enjoyed a position in the hormone field quite analogous to that occupied by Roche in the field of synthetic chemistry where Roche has been regarded as a leader. The rest is a story of long conferences between executives and administrators of the two companies. The outcome was never in doubt, however, for at every conference table it was apparent that identical ideals motivated both groups. Both Organon and Roche were from the start convinced that they could mutually benefit from each other's association, and that together, through their new joint subsidiary, Roche-Organon, they could foster a new evolution of discoveries that may prove highly serviceable in scientific medicine."

Hoffman-La Roche, Inc., Dr. Klein emphasized, will continue as a separate entity, as will Organon abroad. But the scientific departments and research laboratories of the three organizations, Hoffman-La Roche, the Organon Company of Holland, and the new Roche-Organon Company of Nutley, New Jersey, will natuarally be in close cooperation with one another. For the immediate present, Roche-Organon products will be manufactured in the extensive laboratories of Hoffman-La Roche at Nutley, New Jersey, where space will also be provided for the commercial and other departments of the new company. This is a temporary arrangement only; early announcement is expected of plans for the erection of a new and separate home for the Roche-Organon Company, adjoining the present Hoffman-La Roche buildings, embodying the latest and most complete scientific equipment for endocrine research and the production of hormone preparations.

Many Organon products are well-known to American physicians. A few of the widely prescribed preparations which will now be manufactured and distributed by Roche-Organon are the estrogenic hormones, Di-Menformon and Progesterone; the synthetic male sex hormone, Neo-Hombreol; the gonadotropic hormone of pregnancy urine, Pregnyl the vital hormone of the adrenal cortex, Cortin; and antianemic liver and stomach preparations of unusually high potency and purity for the treatment of pernicious anemia. Throughout Europe the Organon Company is recognized as a leader in endocrine research and in the production of hormones. It includes in its staff several internationally famous endocrinologists. The scientific advisor, Professor Laqueur, who has been in the forefront of endocrine research, is also the Director of the Pharmacological Laboratory of the University of Amsterdam and the president of the university.

The profession has cause to look with great hope upon the future of Roche-Organon in connection with coming developments in endocrine research.

★

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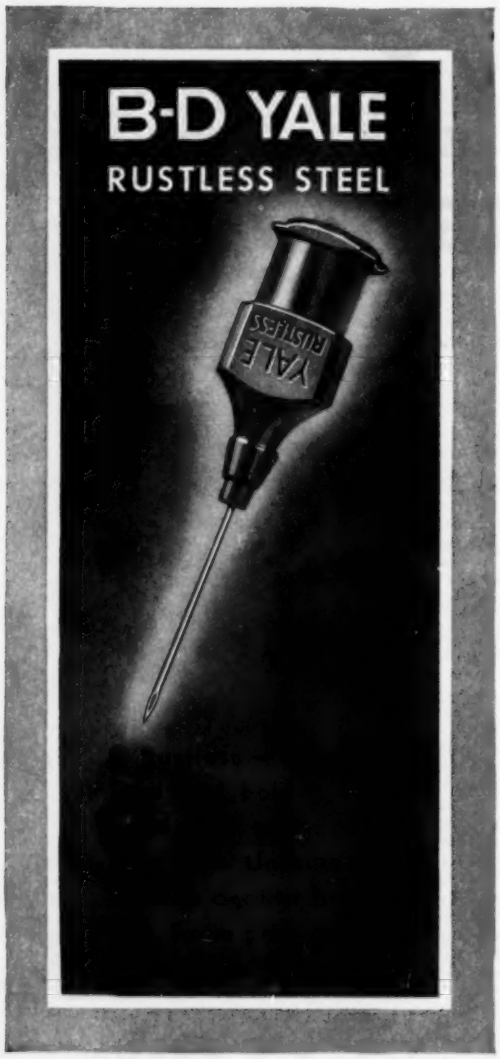

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Beck, Alexander, from 1701 68th Ave., to 5712 Chew St., Philadelphia, Pa.

Benson, Louis E., from 6015 Hollywood Blvd., to 3712 Whittier Blvd., Los Angeles, Calif.

Boyd, R. W., COPS '37; 7509½ Sunset Blvd., Hollywood, Los Angeles, Calif.

Bray, J. Graham, from Rutledge, Mo., to Edina, Mo.

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Carpenter, Robert H., from Worth, Ill., to 1116 American Natl. Bank Bldg., Beaumont, Texas.

Clements, Kibby J., from Plainview, Texas, to 501-02 Travis Bldg., San Antonio, Texas.

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Conklin, Monroe K., from St. Joseph, Mich., to 1174 Madison Ave., Grand Rapids, Mich.

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Galbraith, Robert A., from 4060 Orange St., to 3675 12th St., Riverside, Calif.

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Haughawout, Charles F., from Tacoma, Wash., to 902 Shafer Bldg., Seattle, Wash.

Heine, Frank R., from North Carolina Bank Bldg., to 910 Security Bank Bldg., Greensboro, N. C.

Herst, S. J., from Kansas City, Mo., to 835 Lincoln Road, Miami Beach, Fla. (Winter Address).

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Johnson, Charles E., from 171 Westminster St., to 419 Brook St., Providence, R. I.

Kendall, Frank I., from Denver, Colo., to Riverton, Wyo.

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Koplovitz, Samuel, from Masonic Bldg., to 126 N. Main St., Keyser, W. Va.
Lewis, George L., from 96 N. Laurel St., to 50 N. Vine St., Hazelton, Pa.
Littlefield, Don C., from 1143 N. Mission Road, to 1221 N. Mission Road, Los Angeles, Calif.
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McErlain, George F., from Mandan, N. Dak., to Ottie Bldg., New Salem, N. Dak.
McMath, W. Paul, from Gardena, Calif., to Box 273, La Habra, Calif.
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Simmons, Richard H., from Blue Springs, Mo., to 31st & Main St., Kansas City, Mo.
Skilling, Donald S., from Passaic, N. J., to 112 Union Ave., Old Orchard Beach, Maine.
Spates, Edwin M., (See correction, page 31 of this issue of The Journal).
Spencer, Walter Dean, from Jefferson City, Mo., to Marshfield, Mo.
Stapholz, Irving, from Elizabeth, N. J., to 29 E. Ninth St., New York, N. Y.
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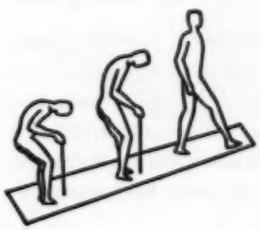

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Wilson, Walter B., from 2653 Hollyridge Drive, to 2811 Rowena Ave., Los Angeles, Calif.
Wolfe, Frank B., Jr., from Flint, Mich., to 601 Peoples Bldg., & Loan Bldg., Saginaw, Mich.
Woodruff, George H., Jr., from Los Angeles, Calif., to R. R. No. 1, Box 631 Pasadena, Calif.
Wynn, Paul V., from 3 Woolworth Bldg., to Franciscan Hotel, Albuquerque, N. Mex.
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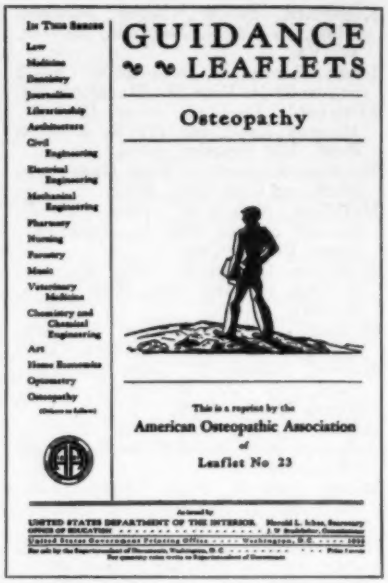

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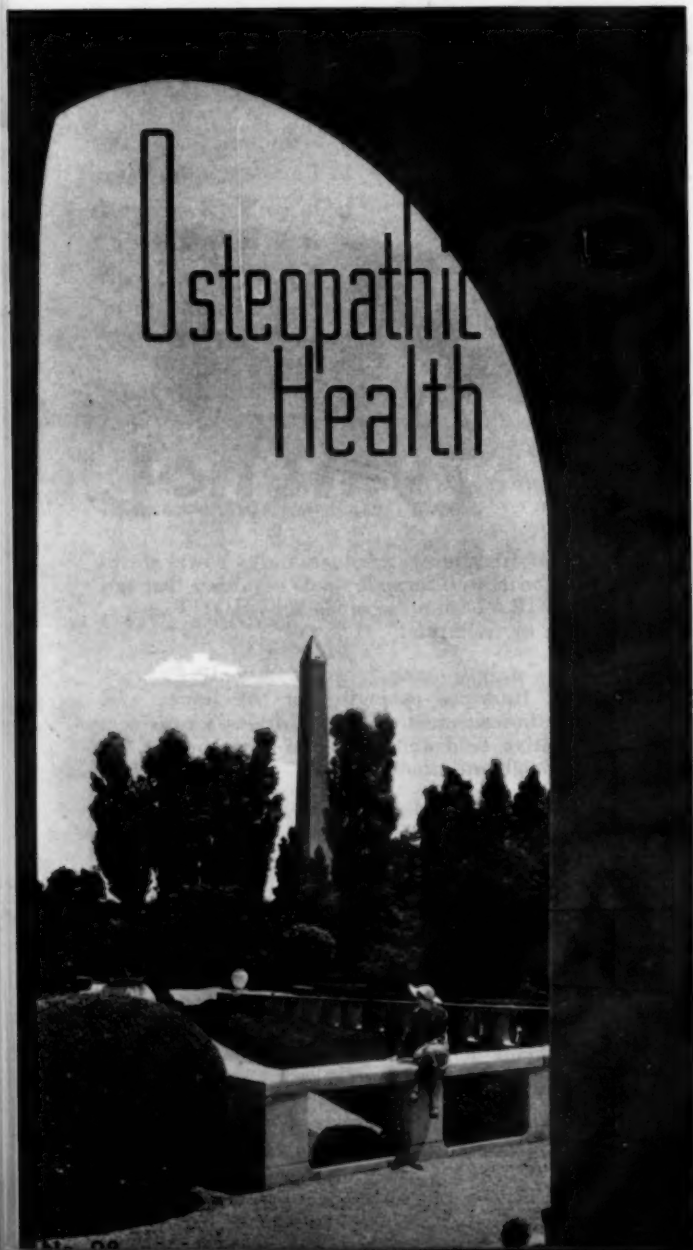
February Osteopathic Magazine Titles



OSTEOPATHY IN PREGNANCY. By Lionel J. Gorman, D.O.

The author describes osteopathy's efficacy in relieving the discomforts of pregnancy, and points out how it has reduced maternal and infant mortality.

CARE OF YOUNG CHILDREN'S FEET. By H. Van Arsdale Hillman, D.O.

Advice is given parents on how young children's feet should be cared for to prevent distortion which causes discomforts and disabilities in later life.

FRIENDS OF THE BIG TOP. By David E. Reid, D.O.

Written by a member of the Circus Fans' Association, Dr. Reid describes this unique organization and tells how performers benefit by osteopathy. It is an article of wide general appeal, attractively illustrated.

OSTEOPATHY ON AN HISTORIC TREK. By Clarence J. Shaffer, D.O.

The author, who is the official Health Officer of the Northwest Territory covered-wagon caravan now making its way across country from Massachusetts to Ohio, describes his part in this historic trek.

A CITY BESIEGED. By Henry George III, D.O.

The devastation which rats can cause in a modern city is likened to that created by pneumonia germs in the citadel of the body.

ALCOHOL VS. MAN. By Edward B. Houghtaling, D.O.

Popular questions regarding the use of alcoholic beverages are answered with scientific facts.

THE X-RAY AND THE GROWING CHILD. By C. A. Tedrick, D.O.

Case reports are briefly given to show the role of x-ray examination in disclosing congenital defects and diseases of the bones and cartilage in growing children.

Entering Thirty-Eighth Year

NO less valuable is OSTEOPATHIC HEALTH, now entering its 38th year. This is probably the earliest osteopathic lay educator. It too has improved with the passing of the years. It also has a very high editorial standard and is attractively presented. The fact that it has served with increasing satisfaction for so many years is proof of its value to the profession. You need have no hesitancy in offering it to the most discriminating reader.

Osteopathic Health No. 98

OSTEOPATHY—WHAT AND WHY
By Ray G. Hulburt, D.O.

This is one of the most popular articles ever published by the A.O.A. It tells of the early history of osteopathy, explains the fundamental scientific basis of osteopathic therapy, and answers the question "Why does osteopathy help in all abnormal conditions?"

INFLUENZA
By R. C. McCaughan, D.O.

A timely topic upon which your patients should be informed. It describes the treatment given by osteopathic physicians for this prevalent disease, and includes statistical information gathered during the 1918 epidemic.

APPENDICITIS
By George J. Conley, D.O.

An article in which an osteopathic surgeon gives the osteopathic viewpoint on appendicitis. Warning against purgation, delaying in sending for a doctor, and not taking the advice of the doctor when operation is necessary are three of the important causes of high mortality set forth in this article.

SEE PRICES ON PAGE 30

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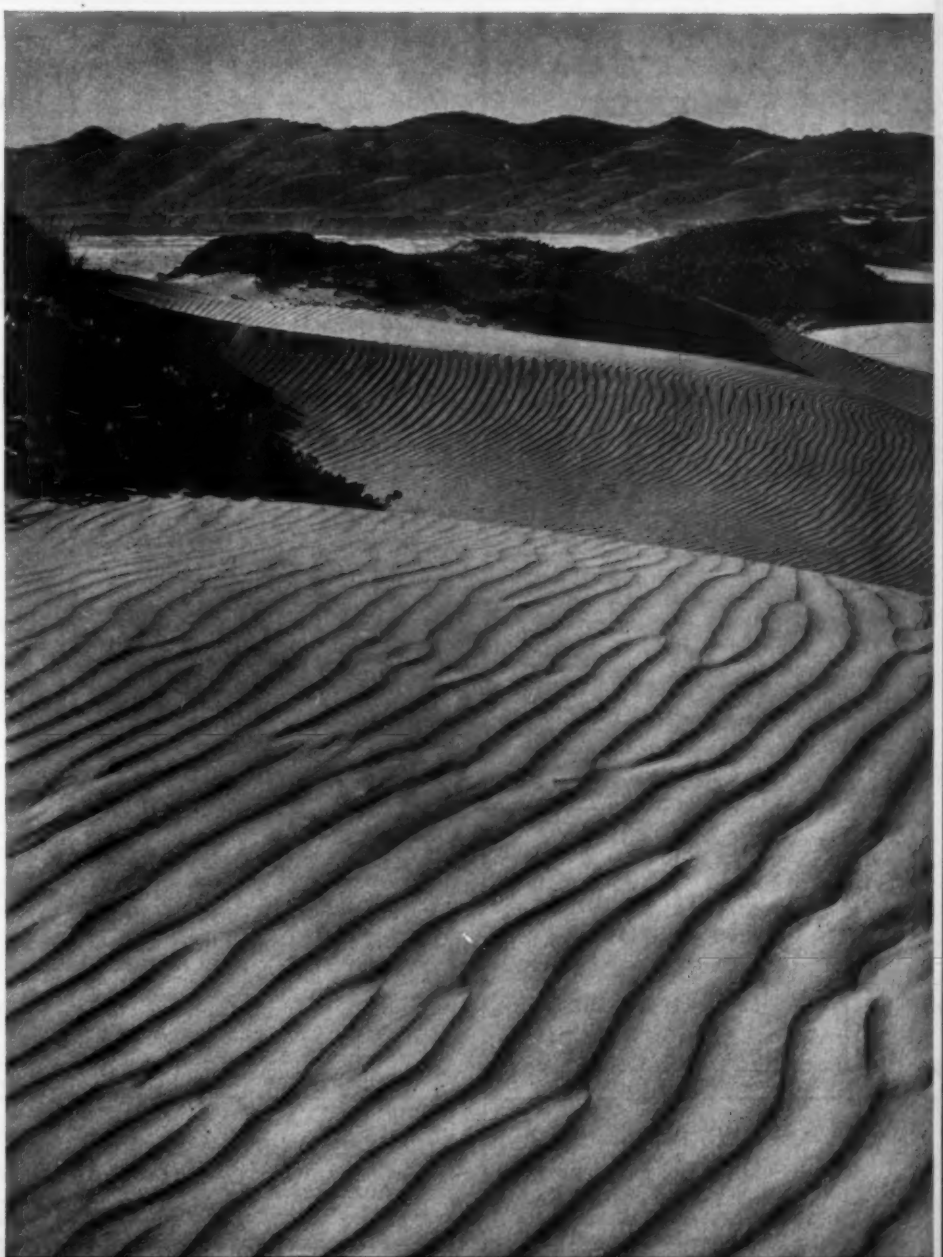

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I received a copy of the booklet, "Osteopathy," this morning and found it very good and feel that it covers the field well. Something of the sort has long been needed, and it is a pleasure to me to think that part of the money I subscribed to the Public & Professional Welfare Fund has been used for that purpose.—
Kenneth P. Wheeler, Brattleboro, Vt.

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CORRECTION

The June Journal incorrectly gave the address of Dr. Edwin M. Spates as 1328 W. Sixth St., Los Angeles, Calif. His correct address is Foreman Bldg., 707 S. Hill St., Los Angeles, Calif.

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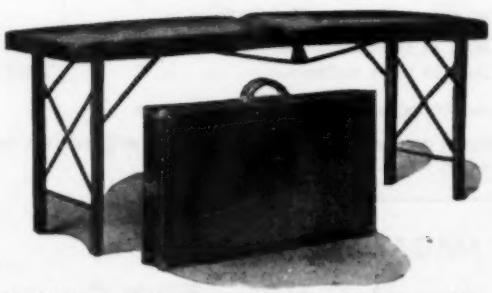

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